SAINT BARTHOLOMEW'S HOSPITAL JOURNAL

JANUARY 1950

VOL. LIV No 1

CONTENTS

Editorial 1

Abernethian Society 2

Radio-isotopes in Biology and Medicine, by Professor A. Wormall, D.Sc. 3

"Round the Fountain" 8

Cortina d'Ampezzo 9

Mackenzie's, by W.G.W. 10

Bart.'s in the Belfry 11

A Case of Chronic Ulcerative Colitis, by F. M. Shattock, M.B., B.S. ... 12

Thirteenth Decennial Club 17

Sport 18

Examination Results 19

Book Reviews 20

Recent Papers by Bart.'s Men 23

INSURANCE

for your home

The "Car & General" Comprehensive 'Home' Policy includes FIRE, BURGLARY, DOMESTIC SERVANTS, *and many other risks incidental to a home*

for yourself

In these days a "Car & General" Personal Accident Policy is more of a necessity than ever before

CAR & GENERAL

INSURANCE CORPORATION LTD.

83 PALL MALL, LONDON, S.W.1

BOOKS for the NEW YEAR

APPLIED MEDICINE: Descriptive Cases, and Cases demonstrated at the Bedside by Question and Answer.

By G. E. BEAUMONT, M.A., D.M., F.R.C.P., D.P.H. 74 Illustrations **30s.**

RECENT ADVANCES IN THE PHYSIOLOGY OF VISION.

By HAMILTON HARTRIDGE, M.A., M.D., Sc.D., F.R.S. 236 illustrations. **25s.**

RECENT ADVANCES IN SOCIAL MEDICINE.

By A. C. STEVENSON, M.D., M.R.C.P., D.P.H. 15 diagrams. **18s.**

ESSENTIALS OF ORTHOPAEDICS

By PHILIP WILES, M.S., F.R.C.S., F.A.C.S. 7 Coloured Plates and 365 Text-figures. **42s.**

OPHTHALMIC MEDICINE

By J. H. DOGGART, M.A., M.D., F.R.C.S. 28 Coloured Plates and 87 Text-figures. **32s.**

A SHORT TEXTBOOK OF MIDWIFERY

By G. F. GIBBERD, M.S., F.R.C.S., F.R.C.O.G. *Fourth Edition.* 195 Illustrations. **21s.**

FORENSIC MEDICINE
A Textbook for Students and Practitioners

By Sir SYDNEY SMITH, *C.B.E.*, M.D., F.R.C.P. and F. S. FIDDES, *O.B.E.*, M.D. *Ninth Edition* 175 Illustrations. **30s.**

CHILD HEALTH AND DEVELOPMENT
A Symposium by Specialist Contributors

Edited by RICHARD W. B. ELLIS, *O.B.E.*, M.D., F.R.C.P. 150 Illustrations. **18s.**

MEDICINE: Essentials for Practitioners and Students

By G. E. BEAUMONT, M.A., D.M., F.R.C.P., *Fifth Edition.* 71 Illustrations. **30s.**

DISEASES OF INFANCY AND CHILDHOOD

By WILFRID SHELDON, M.D., F.R.C.P. *Fifth Edition.* 18 Plates and 143 Text-figures. **30s.**

A TEXTBOOK OF SURGICAL PATHOLOGY

By C. F. W. ILLINGWORTH, *C.B.E.*, Ch.M., F.R.C.S. (Edin.), and B. M. DICK, M.B., F.R.C.S. (Edin.). *Sixth Edition.* 317 Illustrations. **45s.**

A SHORT TEXTBOOK OF SURGERY

By C. F. W. ILLINGWORTH, *C.B.E.*, Ch.M., F.R.C.S. Edin. *Fourth Edition.* 12 Plates and 227 Text-figures **20s.**

HUMAN PHYSIOLOGY

By F. R. WINTON, M.D., D.Sc., and L. E. BAYLISS, Ph.D. *Third Edition.* 248 Illustrations. **25s.**

BIOCHEMISTRY FOR MEDICAL STUDENTS

By W. V. THORPE, M.A., Ph.D. *Fourth Edition* 36 Illustrations. **18s.**

PRINCIPLES OF HUMAN PHYSIOLOGY (Starling)

Tenth Edition. By C. LOVATT EVANS, D.Sc., F.R.C.P., F.R.S. 693 Illustrations. **42s.**

TEXTBOOK OF GYNAECOLOGY

By WILFRED SHAW, M.A., M.D., F.R.C.S., F.R.C.O.G. *Fifth Edition.* 4 Plates and 294 Text-figures. **25s.**

Also by WILFRED SHAW

TEXTBOOK OF MIDWIFERY

Third Edition. 4 Plates and 235 Text-figures. **22s. 6d.**

CHEMICAL METHODS IN CLINICAL MEDICINE

By G. A. HARRISON, M.D., F.R.I.C. *Third Edition* 5 Coloured Plates and 120 Text-figures. **40s**

RECENT ADVANCES IN PATHOLOGY

By G. HADFIELD, M.D., F.R.C.P., and L. P. GARROD, M.A., M.D., F.R.C.P. *Fifth Edition.* 60 Illustrations **21s.**

RECENT ADVANCES IN ANAESTHESIA AND ANALGESIA: Including Oxygen Therapy

By C. LANGTON HEWER, M.B., B.S., M.R.C.P., F.F.A.R.C.S. *Sixth Edition.* 149 Illustrations. **21s.**

ANAESTHETICS FOR MEDICAL STUDENTS

By GORDON OSTLERE, M.A., M.B., D.A.Eng. **7s. 6d**

ESSENTIALS FOR FINAL EXAMINATION IN MEDICINE

By J. de SWIET, M.D., M.R.C.P. *Third Edition.* **9s.**

THE M.B., B.S. FINALS, 1932-45

By F. MITCHELL-HEGGS, M.B., F.R.C.S. *Third Edition.* **8s. 6d.**

SYNOPSIS OF REGIONAL ANATOMY

By T. B. JOHNSTON, *C.B.E.*, M.D. *Sixth Edition.* 17 Illustrations. **18s.**

ELEMENTARY ANATOMY AND PHYSIOLOGY

By JAMES WHILLIS, M.D., M.S., F.R.C.S. *Third Edition.* 108 Illustrations. **16s.**

BACTERIOLOGICAL TECHNIQUE: A Guide for Medical Laboratory Technicians

By WALLACE W. W. McEWEN, A.I.M.L.T., F.R.M.S. 75 Illustrations. **15s.**

The Pocket Series

GYNAECOLOGY

By S. G. CLAYTON, M.S., M.D., M.R.C.O.G. **7s 6d.**

MEDICINE

By G. E. BEAUMONT, M.A., D.M., F.R.C.P., D.P.H. *Second Edition.* **9s.**

SURGERY

By PHILIP H. MITCHINER, *C.B.*, *C.B.E.*, M.D., M.S., F.R.C.S., and A. HEDLEY WHYTE, *D.S.O.*, M.B., M.S., F.R.C.S. *Second Edition.* **8s. 6d.**

J. & A. CHURCHILL LTD. . 104 GLOUCESTER PLACE · LONDON, W.1

Improved nasal medication

THE 'METHEDRINE' BRAND INHALER

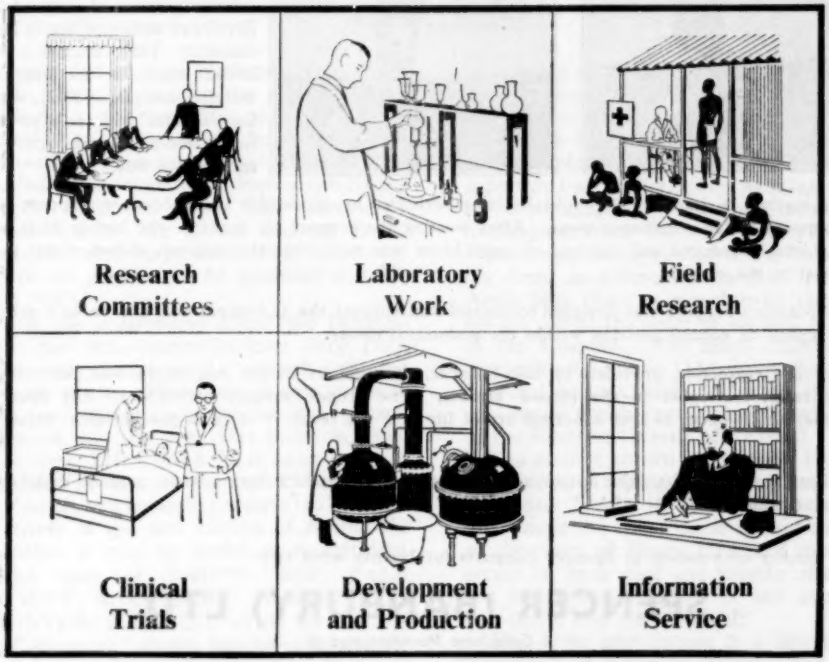
- *Promptly relieves nasal congestion*
- *Does not sting or irritate nasal mucosa*
- *Is of improved design*
- *Is easily taken apart for cleaning*

BURROUGHS WELLCOME & CO.
(The Wellcome Foundation Ltd.)
LONDON

The 'Methedrine' BRAND Inhaler

Boots contributions to

CLINICAL RESEARCH



The Boots organisation is proud of its long tradition of service to the medical profession. These diagrams indicate some of the many spheres in which Boots' activities are continually helping clinical research.

BOOTS PURE DRUG COMPANY LIMITED, NOTTINGHAM, ENGLAND

SPENCER ABDOMINAL SUPPORT for VENTRAL HERNIA

Patient has two children.

Twenty-one years ago, 1928, following birth of last child, developed umbilical hernia 12in. diameter. 1939, operation relieved condition for approximately three years (1942), when hernia came back as a ventral hernia and continued to grow to tremendous size.

Examination in January 1947 revealed this hernia to be inoperable and a Spencer Support was recommended for continuous wear. After wearing the support six months, the hernia itself was considerably reduced and the loss of body bloat was such that the patient's abdomen was near normal in the support.

The patient's support was designed to control and support the abdominal wall and to help return the organs to normal position within the abdominal cavity.

Note the correction provided by the Spencer, the support to the abdominal wall, the raised diaphragm, the uplift to the ptosed breasts. The proper support provided by the Spencer enables this woman to lead a normal active life and the result is of great psychological value to her.

Spencer is suggested to the doctor as the support of choice for hernia when surgery is delayed or contra-indicated.

For further information of Spencer Supports for Hernia write to:—

SPENCER (BANBURY) LTD.

Consultant Manufacturers of

Surgical and Orthopaedic Supports

SPENCER HOUSE · BANBURY · OXFORDSHIRE

Tel. Banbury 2265

BEWARE OF IMITATIONS. Spencer (Banbury) Ltd. regret the necessity of issuing warning to beware of copies and imitations. Look for the SPENCER LABEL stitched in the Spencer Support and ensure that it is a genuine Spencer Support and not a so-called copy.

Spencer copyright designs are original and distinctive and for more than 20 years have been recognised by the Medical Profession as a symbol of effective control for abdomen, back and breasts.

Trained Fitters available throughout the Kingdom

Copyright: Reproduction in whole or in part is prohibited except with the written permission of S (B) Ltd

S.B.1/50

ST. BARTHOLOMEW'S

HOSPITAL JOURNAL

Vol. LIV JANUARY, 1950 No. I

HERALDRY

NOT long ago an irate gentleman wrote from South Africa to enquire the significance of the device at the top of this page. We wrote and told him. Angrier still, he demanded an explanation of the vandalism that could dare to substitute a meaningless hieroglyph for his revered black-and-white, and threatened further action. We looked him up in the book, and were surprised to find that it was a bare ten years since he qualified and left these walls!

Now the controversy about the Hospital Arms has been current at least since 1933, when many letters on the subject appeared in these pages. There was a recurrence in 1938, and the decision to use the present Arms on the title page was made in 1947. Since then, a few fresh facts have come to light, and in view of the use of these Arms (in their correct heraldic tinctures) to decorate the cover of the new edition of *Round the Fountain*, it may be useful to recapitulate.

The coat of PARTY PER PALE ARGENT AND SABLE A CHEVRON COUNTERCHANGED, which we will call the "Hospital" Arms, has been in use for several centuries, and is lavishly displayed today. But it was never really the property of the Hospital. Sir Norman Moore traces its origin to a seal first used by John Wakeryng in 1423, the first year of his Mastership of the Hospital. There the shield appears surmounted by a crucifix, with a tree at each side, and an Agnus Dei at the apex. The document on which this seal was first used, an agreement with the Prioress of St. Helen's as to a drain and waterfall in Mugwell Street in the Parish of St. Olave, has since disappeared; but the use of the seal throughout the 39 years of Wakeryng's Mastership may indeed have led to the adoption of those Arms for the Hospital. They are shown alone, above the illuminated capital in Cok's *Cartulary* which depicts Brother John Cok, his arms, and three angels supporting a crucifix. The painting appears to be contemporary, and the *Cartulary* was in progress from 1456 to 1468. But John Wakeryng's family device was a Pelican and his Arms so different from the "Hospital" Arms that there is no clue to the reason for his use of the latter in his seal as Master of the Hospital. The usual Hospital Seal, in use from 1308 to 1534, bears the lions of England on two small shields on either side of a figure which presumably represents one of the Kings or Queens of England.

The earliest known use of the "Hospital" Arms is on a thirteenth century tomb of the Lillebone family in Winchester Cathedral, and under the same name in an Arms Roll of the reign of Henry III. But this family seems to have died out shortly afterwards, nor is there any record of any connection between it and the Hospital.

The Arms also appear in a fifteenth century book of Venetian Arms in the College of Arms as those of a Venetian family named Renier: this is probably the source of their display on a castle in Cyprus. But once again, no connection of the family with the Hospital is known.

In the year 1558, Norroy King of Arms granted the "Hospital" Arms to Lawson, of Usworth, Co. Durham. The family still exists, and a memorial window to one of its sons in the Church of St. Cross at Winchester displays these arms.

The family of the Earl of Caledon, beginning with a Barony created in 1770, also

bears the "Hospital" Arms, differenced by a crescent in the base, and various other devices in subsequent generations. The original Grant of Arms was probably made by Ulster King of Arms, which might explain the similarity to those already borne by the family of Lawson.

It is true that the Arms appear in a sixteenth century MS at the College of Arms as those of the Hospital (*c.* 1535): and in the same book are the Arms of GULES TWO LIONS PASSANT GARDANT AND IN CHIEF AS MANY CROWNS OR for the priory of Saint Bartholomew. That is the blazon of the Arms which we now use on this page, and on *Round the Fountain*.

They first appear on Rahere's tomb in the Priory Church of St. Bartholomew the Great: the tomb was probably made about the year 1405. They are prominently displayed on the side of the tomb and on a shield borne by two angels at Rahere's feet, and there is little doubt that they must then have been accepted as the Arms of the Priory.

Now the Hospital was founded jointly with the Priory, and the Master used to swear fidelity to the Prior. Since the Dissolution, the Hospital alone has survived from the Foundation, and would be justified in succeeding to the use of the Priory Arms.

It should be made clear that the use of Arms was at first regulated only by priority of usage, under the periodic supervision of the King's Heralds. The Heralds were particularly strict in the reign of Henry V (1413-22), when the Priory Arms were presumably already acceptable by right of ancient usage. No amount of usage after that time will ever again carry any such right, so that, even if the black-and-white Arms were intended to represent the Hospital, John Wakeryng began to use them too late to establish them by usage alone. When the College of Arms was founded in 1483 it would no doubt have been possible to obtain a Grant of these Arms for the Hospital, but their allocation to Lawson of Usworth in 1558 implies (unless the College was mistaken) that they were not in use by any other person at that time: nor should they have been used subsequently by anyone else.

There was a suggestion, in 1933, to incorporate the two Bearings in a quartered Coat, with Supporters such as a monk and a nun. This found little favour. Unofficial heraldic opinion today suggests that it would be impossible to confirm to the Hospital the use of the black-and-white Arms, unless they were clearly differenced from those borne by the Lawson and the Alexander (Earls of Caledon) families: they would then lose their admitted attraction of simplicity. The Priory Arms, on the other hand, might well be allotted to the use of the Hospital. They are more decorative, just as simple, and they commemorate the Royal influence in Rahere's Foundation and the Second Foundation. Most important, a Patent for their use from the College of Arms would avoid the unauthorised and vulgar display of those "Hospital" Arms which belong elsewhere—a display which, for all its ubiquity and five centuries duration, can never be justified.

ABERNETHIAN SOCIETY

The meetings to be held from January-March are:—

January 12 Medical Films.
1. The Medical Applications of Sulphonamides.
2. The Use of Thiopentone Sodium in Intravenous Anaesthesia.

February 2 Dr. Geoffrey Bourne on "The Place of Optimism in the Treatment of Heart Disease."

February 23 Mr. G. Russell Vick, K.C., Chairman of the Bar Council, on "The Bar of England."

March 2 Rt. Hon Lord Moran on "Conscription."

All meetings will be at 5.30 p.m.

The meeting on January 12 will be held in the Physiology Lecture Theatre, Charterhouse Square: all others will be held in the Clinical Lecture Theatre at the Hospital.

Meetings will probably be arranged on February 16 and March 16.

RADIO-ISOTOPES IN BIOLOGY AND MEDICINE

By PROFESSOR A. WORMALL

WHEN Hevesy, in 1923, first used a radio-active isotope to study the transport of lead in plants, I wonder if he or anyone else could visualise the tremendous developments which would later take place in this field of work. In those early days the choice of radioactive isotope was limited to those which occur naturally, such as those of radium, and it was not until artificial radio-activity had been discovered by the Joliot-Curies in 1933 that the great potentialities of radio-isotopes as tracers began to be realised. In this renewed attack starting about 1935, Hevesy was again in the forefront, and soon he was joined by dozens and later thousands of other scientists who had an urge to use these new weapons.

At present, thanks to the physicist, the cyclotron and the atomic pile, about 600 different radioactive isotopes have been characterised and many are available in fair quantity for research and the treatment of disease. There is a never-ending stream of publications on the use of these isotopes in investigations in medicine and general science. My own bookshelves contain six largish text-books on radio-isotopes, four of them published since the begining of 1948, and many hundreds of reprints and pamphlets. Each year there are thousands of published papers to be read or at least noted, and as yet the stream is a mere trickle compared with what is to come. In 1975 perhaps, if we survive until then, the biochemist, the physicist, the clinician and, above all, the patient will be able to judge in true perspective the relative gains and losses resulting from the developments in nuclear physics which incidentally produced the atomic bomb. It may well be that when the balance sheet is prepared the profits will greatly exceed the losses.

In almost every branch of scientific investigation the knowledge is rapidly spreading that isotopic tracers can profitably be used to study problems which appear to be insoluble by the ordinary classical methods of chemistry and physics. During the past few years my colleagues and I have, for example, been consulted about the labelling of such diverse compounds and materials as penicillin and sulphapyridine, starch in growing wheat, tsetse flies, red blood cells, plasma proteins, bacterial antigens and "marked" bank notes. Quite recently I have read reports on the use of radioactivity determinations (a) to "date" the ancient Egyptian tombs, and (b) to give a more precise figure for the age of the earth; apparently there seems to be some doubt as to whether the earth is 3.3, 2.4 or 2.1 x 10^9 years old, and I hardly need to add that it is a matter of great moment to some people. Another report which aroused my interest described the labelling of mosquitoes with radio-phosphorus for the study of the distribution and habits of the yellow fever-carrying mosquitoes in West Africa.

The applications of this technique to medicine are manifold, and so far there has been merely a token contribution from nuclear physicists and biochemists. Blood volume, circulation rate, the fate of transfused red blood cells, the physiology of the placental transfer, absorption from the alimentary tract and through the skin, and the metabolism of a wide variety of compounds including that of carbon monoxide in man have all been studied by the radio-isotope technique. Diseases of the thyroid have been studied in the human subject with the aid of radio-iodine, and peripheral vascular diseases with radio-sodium. Therapeutic applications of a few radio-isotopes such as those of iodine and phosphorus are now fairly well established, and several others, including strontium, manganese and zinc, are now being tested in connection with the treatment of certain malignant conditions.

Advantages and disadvantages of the radioactive isotopic tracer method

When properly used, isotopes are excellent labels or indicators for attachment to molecules of foodstuff or drug, tissue protein or metabolite. Both radioactive (i.e., unstable) and stable isotopes can be used for this tracer technique, and it is unwise, in my opinion, to attempt to assess the relative merits of the two types of label. It is fairly obvious, however, that radioactive labels which can be traced in the living animal will generally be more useful than are stable isotopes for investigations on man, and furthermore the radio-isotopes give off powerful rays which

in some cases may be put to beneficial use. This article deals almost exclusively with the radioactive isotopes, but it should not be forgotten that the stable ones, such as deuterium (heavy hydrogen) and N^{15} (heavy nitrogen), have proved extremely valuable in biochemical research.

A molecule of a compound labelled with an isotope is, for all practical purposes, identical with the normal unlabelled molecule, and indeed the radioactive compounds used in tracer work usually contain many thousands or even millions of ordinary molecules for each one which is radioactive. Also, experiments can be made under purely physiological conditions. There is no need to produce a pathological condition, i.e., it is not necessary to remove the animal's pancreas, liver or pituitary, or to dope the animal with phlorrhizin, alloxan or a diet deficient in vitamin X. The animal can live normally throughout, and usually after, the experiment, and the compound under investigation can be given in normal or even subnormal amounts. Where a radioactive isotope is used, its appearance in the circulating blood and in urine, faeces and expired air can readily be detected; furthermore, particularly when the isotope used emits penetrating gamma-rays, the deposition of the labelled compound in tissues lying some distance beneath the skin can often be detected by a suitable Geiger-Müller counter held near the surface of the body.

This catalogue of advantages sounds almost too good to be true, and we must look for the shortcomings. Fortunately they are few in number. The label must, of course, be one which can be attached firmly to the molecule under consideration, for it is usually a waste of time to trace a label which is detached from the labelled compound as soon as this is introduced into the body. Firm attachment can, however, usually be accomplished without damaging the rest of the molecule, and in our own work on immuno-chemistry, my colleagues and I are introducing the radio-isotopes of iodine, sulphur and phosphorus into antibodies and antigens in such a way that the label is only removed when the protein is hydrolysed. When using these isotopic tracers, one must always remember that one merely detects and estimates the label.

Another disadvantage, and a serious one in many cases, is the possible serious ill-effects of the radiations produced by the radio-isotopes. For a long-term experiment or for any experiment on a normal animal, one should avoid the use of an amount of radio-isotope which will cause damage to the tissues. Fortunately one can usually ensure that a safe amount of radio-isotope is used in tracer investigations.

The choice of suitable isotopes for a particular experiment is often strictly limited. The isotope one would like to make use of may have a very short half-life period. This half-life period is the period during which half the radioactivity is lost, and it varies from a few micro-seconds for some isotopes to thousands of years for others. A radio-isotope which decays very rapidly will naturally be almost useless for most types of biological work; F^{20}, for example, one of the radioactive isotopes of fluorine, has a half-life of 12 secs., i.e., half the radioactivity is lost in 12 secs., 75% in 24 secs. and about 97% in one minute. Obviously this isotope would not be very helpful in studies on the deposition of calcium fluoride in teeth, or in most other biological investigations. Other radio-isotopes are very long-lived. C^{14}, one of the isotopes of carbon, has, for example, a half-life of about 5,100 years, and it should be used very cautiously in investigations on man, particularly if there is a possibility that it might become attached to some compound which is stored in the body. Fortunately there are a few radio-isotopes which are almost ideal for metabolic and other tracer investigations on man and other animals. Three of the most interesting in this group are phosphorus, iodine and sodium, with half-life periods of 14 and 8 days and 14.8 hours respectively.

These few limitations should be kept in mind, but they do not seriously detract from the outstanding value of a new technique which has already helped to solve some of the most difficult problems of biochemistry and physiology. It should be emphasised, however, that investigations of this type, and their planning, are jobs for the expert, for the radio-isotopes can be very dangerous to the experimental subject and to the health and reputation of the investigator.

The preparation of radioactive isotopes and radioactive compounds

Each chemical element is now known to exist in the form of two or more isotopes, the various isotopes of any one element having the same electrical charge on the atomic

nucleus but having different masses. Carbon, for example, can exist as isotopes of masses 10, 11, 12, 13 and 14, i.e., as C^{10}, C^{11}, C^{12} (the most abundant of these isotopes), C^{13} and C^{14}. Of these isotopes, C^{10} C^{11} and C^{14} are radioactive, i.e., undergo spontaneous decomposition with the emission of particles or rays.

Radio-isotopes are prepared by the action of neutrons, protons, deuterons or alpha particles on stable isotopes, i.e., on normal compounds, and often the required isotope can be made by two or three different methods. Radio-phosphorus (P^{32}), for example, can be made by neutron bombardment of P (as inorganic phosphate) or of S (as roll sulphur or carbon disulphide) or of Cl (as NaCl, carbon tetrachloride, etc.), or by deuteron bombardment of S or P.

Most of the radio-isotopes can be produced most readily and most economically by the atomic pile, but the cyclotron still has its share of these duties. The two "instruments" should be considered complementary in this respect, though the atomic pile can quickly produce certain radio-isotopes in amounts many thousand times as great as those which can be made by the cyclotron in a reasonable time. Both types of plant are costly to build and maintain, and cheap portable "sets" which can readily produce large quantities of various radio-isotopes should be suspect until their performance has been measured in a properly controlled test.

Having received a supply of the radio-isotope, the investigator often wants to introduce it into a compound whose biological properties he proposes to study. On the other hand, he may simply wish to study the fate of the substance he has been supplied with, and all he has to do is to trust the label on the bottle and go right ahead; usually this is fairly safe, but occasionally the label may be wrong, for the preparation of chemical compounds on an ultramicro-scale with "carrier-free" or "weightless" isotope preparations is not a simple matter. For example, the amount of iodine in a sample of "carrier-free" iodine supplied for research and therapy is well below that which can be detected by the most sensitive chemical test.

For many investigations, clinical as well as laboratory, we want to introduce the radio-isotope into a drug, a protein, a fat, a red cell, a bacillus or a yeast. Sometimes this is easy, but more often it requires considerable knowledge of what is almost a new chemical technique. Red blood cells can be labelled with radio-phosphorus fairly easily by keeping the cells for an hour or so in a solution containing radio-phosphate. Bacteria and other organisms can be labelled by adding radio-phosphate or radio-sulphate to the medium in which they are growing, and in this way P^{32} can be introduced into nucleoprotein and phospholipid, and the S^{35} into proteins and other sulphur-containing compounds (e.g. penicillin and vitamin B_1) which the organism normally produces. This biological synthesis of radioactive compounds is one which will, I feel sure, be used more and more in the future. It is of limited applicability, but it can be efficient and economical, and, above all, it gives a radioactive, biological compound chemically indistinguishable from the normal non-radioactive product. During the past three years, we have found it excellent for the preparation of a labelled or tagged antigen. We give P^{32} to our hens and they obligingly introduce it into the lipovitellin and phospholipin of the egg yolk; we can then separate these labelled compounds, and inject the lipovitellin into rabbits to see where injected antigens go, or use both compounds in our precipitin tests. Other workers have introduced radio-iron into red cells by giving the isotope to man or some other animal, and the cow and goat have been persuaded to introduce radio-phosphorus into the milk protein, casein.

Frequently, however, the biochemist must do the work himself, and here he is faced with the problem of introducing the radioactive label without seriously altering the chemical and biological properties of the compound he is investigating. Fortunately, the difficulties are not always insuperable. For example, my colleagues and I find it possible to attach radio-iodine to serum proteins without causing any significant change in the biological properties of the proteins. The amount of iodine which enters the protein is far too small to be detected chemically, but one drop of a 5% solution of these iodinated proteins is quite sufficient to make our counting recorders "click" very excitedly.

Occasionally one meets a snag, for some chemical reactions which work well on the ordinary laboratory or works scale seem to become temperamental when carried out with very small amounts of reagents.

Recently we had synthesised for us some radioactive suramin, a drug used for the treatment of human trypanosomiasis (sleeping sickness) in tropical countries. The first sample prepared was radioactive, but only a small fraction of it was suramin. Fortunately we had a chemical test which enabled us to spot this or otherwise we might have been seriously led astray. If we had wanted 10 grams or 10 lb. of suramin, I am sure that we should have received a perfectly pure sample, but the specific activity of the preparation would have been far too low for our investigations.

The detection and estimation of the radio-isotopes

The radiations from a radioactive isotope are usually detected and measured by a Geiger-Müller counter, an ionization chamber or a sensitive electroscope. In most tracer experiments the radioactivity of a weighed amount of the tissue studied is compared with that of the starting material used for the experiment. Photographic methods can also be used, and this autoradiographic method is capable of showing in which minute structure the labelled element or molecule is deposited.

Measurements on the living animal can be made easily by using a portable Geiger counter set, with the counter held near the surface of the body. This equipment is now available in our Hospital and with its aid it is possible to detect and estimate radio-iodine entering the thyroid after administration of the isotope (as potassium iodide), or to detect the appearance of radio-sodium in various parts of the body following its intravenous injection as NaCl. This type of investigation on patients is, of course, most satisfactory when the isotope used emits gamma-rays (similar to X-rays) or other penetrating rays. Iodine and sodium are very suitable for these studies and phosphorus is moderately good.

A few examples of the use of radio-isotypes in biochemistry and medicine

In this short review it is impossible to mention more than a few typical investigations in this field. These I have arranged in three groups, but this division is quite arbitrary and merely made for convenience. For reference purposes a few commonly used radio-isotopes are listed in Table 1, together with their atomic weights or masses and their half-life periods.

Table 1.—A few radio-isotopes useful in biochemistry and medicine

Element.	Radio-isotopes	Half-life period
Carbon	C^{11}	21 min.
	C^{14}	5,100 years
Sodium	Na^{24}	14.8 hr.
Phosphorus	P^{32}	14.3 days
Sulphur	S^{35}	87 days
Iron	Fe^{55}	4 years
	Fe^{59}	47 days
Strontium	Sr^{89}	55 days
Iodine	I^{131}	8 days

Tracer experiments

These have included studies of practically every type of biochemical problem where a labelled molecule can be of service. The tagged molecule is injected into an animal, or given by mouth, and the label is subsequently traced in the various tissues of the body and in the separated individual constituents of these tissues. The isotopic tracer method is almost ideal for many metabolic experiments; in fact, I feel certain that no biochemist would have dared to believe, prior to 1933, that such an excellent method would ever become available.

The results obtained with isotopic tracers, both stable and radioactive, have shown that the body constituents, even those of the most stable tissues like bone and teeth, are in a state of dynamic equilibrium. The proteins of plasma, and at a slower rate the calcium phosphate of bone, are gradually and continuously being broken down and replaced by protein and calcium phosphate respectively.

In other tracer experiments, Dr. Francis, Mr. Mulligan and I, in collaboration with Dr. Banks of our Physics Department, are studying some chemical aspects of immunity. By using antigens labelled with P^{32}, I^{131} or S^{35} and antibodies labelled with I^{131} or S^{35} we are able to determine the amount of antigen and antibody in very small amounts of antigen-antibody precipitates. In some of our experiments we have actually used three different tracers and these, together with total nitrogen determinations, tell us quite a lot about the composition of the specific precipitates. Our results suggest that, with the antibodies we have been studying, each antibody molecule has only one group which can combine with the antigen molecule; in other words, our evidence supports the view that the antibody is "univalent" in this respect.

Whipple and his colleagues in the U.S.A. and many other investigators have used haemoglobin labelled with radioactive isotopes of iron to study the formation and life-span of red blood cells. In this case a double label can be attached by using a mixture of two radio-isotopes of iron, Fe^{55} and Fe^{59}.

Diagnostic purposes

These are essentially tracer experiments, but it is perhaps more helpful and illustrative to group separately those tracer experiments which are primarily designed for studies of the body tissues and the functioning of various organs in man, rather than a study of the precise chemical fate of an administered compound.

Many experimental tumours are known to take up greater amounts of P^{32} than do normal tissues, and it has been found possible in some cases to use this difference for the diagnosis of breast tumours. The beta-rays emitted by the P^{32} are detected by holding the counter near the skin, but it seems probable that this diagnostic use of radio-phosphorus will have only a limited value.

Radio-iodine (usually the I^{131} isotope) has been used for the determination of the level of thyroid function, and it has been claimed that the isotope helps to distinguish between simple hyperthyroidism and the ophthalmopathic type. Many authorities believe that this isotope may possibly be used more often in the future for diagnostic purposes. Radio-sodium, usually given as NaCl, is now being used extensively and very successfully for the diagnosis and study of a number of circulatory diseases. The penetrating gamma-rays emitted by this isotope can readily be detected by a Geiger - Müller counter applied to the surface of the body, and the distribution of sodium in the blood and tissue fluids can readily be followed. Somewhat similar investigations are now being made with radioactive inert gases.

Therapeutic uses

P^{32} was the first artificially produced radio-isotope to be used in therapy, the first tests being made in the U.S.A. in 1936, and since then it has been tested very extensively. According to many experts, the use of this isotope, administered as a solution of sodium phosphate and given *per os* or intravenously, is the " treatment of choice " for many cases of polycythaemia (rubra) vera, and at least as satisfactory as X-rays for the treatment of many chronic leukaemias. Clinical tests are also being made with a colloidal chromic phosphate containing P^{32}, but the results do not appear to have been published as yet.

The use of radio-iodine for the treatment of hyperthyroidism has usually given satisfactory results, but it is probably too early as yet to assess the value of this type of treatment. The same isotope has been used for the treatment of thyroid malignancies, and although the early results were not encouraging, the more recent reports have been more favourable. It is suggested that radio-iodine therapy can be of value for those thyroid malignancies in which iodine is concentrated in the malignant tissue.

Although P^{32} and I^{131} (or sometimes I^{130}, with a half-life period of 12.6 hr.) are the only radio-isotopes which have been used at all extensively for therapeutic purposes, a few others are being tried. For example, radio-strontium and radio-calcium have been tried in the treatment of some bone tumours, and radio-zinc (the short-lived Zn^{62}) and radio-gold (Au^{198}) for the treatment of certain other malignant conditions.

The therapeutic use of radio-isotopes to produce localized irradiation of tissues is still in its infancy, and even the most optimistic workers in this field are cautious in their reports and also in their development of this line of investigation. It is recognized that the ionizing radiations themselves may induce malignant changes in tissues, and indeed it has been shown that both radio-strontium and plutonium can produce bone tumours in mice.

Radio-isotopes and the future

Biochemists, physiologists, pharmacologists, and indeed the majority of those engaged in medical research will probably find in the near future, if they have not already done so, that many of their most difficult problems can profitably be studied with the aid of isotopes. Usually the radioactive ones are more satisfactory than are the stable isotopes for investigations on the living animal. Radioactivity determinations require complicated apparatus and experts to make the measurements, but the difficulties are still greater in the case of the stable isotopes ; their determination is best made by a mass spectrometer, and very few instruments of this type are available in this country. Fortunately we shall soon be equipped with one in my department, and

it is hoped that this equipment will be useful to many others in our College besides my colleagues and myself. Perhaps with its aid we may learn more about the pharmacological action of the nitrogen mustards in relation to their use for the treatment of Hodgkin's and other neoplastic diseases, and there are many other nitrogenous drugs which can be studied by this technique.

As far as research is concerned, it is tolerably certain that many investigators will profitably use radio-isotopes for the study of chemotherapy, bacteriology, diet, immunity and cancer research, to mention only a few of the subjects which are of special interest to the readers of this Journal. Penicillin, sulphapyridine and vitamin B_1 have all been labelled with S^{35} for tracer investigations, and we ourselves are studying radioactive suramin. We hope, for example, that we shall be able to say how many molecules of suramin enter each trypanosome and how many are required to inhibit a molecule of hexokinase, succinic dehydrogenase, trypsin or some other enzyme; perhaps we are too optimistic, but it is fairly certain that no method other than the radio-isotopic tracer method will reveal these secrets. Bacteria, viruses and other organisms can readily be labelled with P^{32}, S^{35}, C^{14} and other radio-isotopes, and it is not difficult to see great possibilities in this field.

As far as therapeutic uses are concerned, one of the greatest hopes must, of course, rest in the possibility that radio-isotopes might be useful for the diagnosis and treatment of cancer. Whilst we must show the utmost caution in this respect, it would be unwise to ignore the possibility that some day a means might be found whereby isotopes might be used to give localized irradiation of malignant tissues. One should not exclude the possibility that some investigator of the future might find that a certain radio-isotope, or more probably a compound containing the isotope, is selectively deposited in tumour tissue, with destruction of that tissue by the radiations emanating from the isotope. This may be a "will-o'-the-wisp," but it is one which we must follow.

REFERENCES

The following textbooks and reviews give good accounts of aspects of the subject which may be of special interest to readers of this JOURNAL:—

Cold Spring Harbor Symposia on Quantitative Biology. Vol. XIII. "Biological Applications of Tracer Elements." 1948. New York: The Biological Laboratory, Cold Spring Harbor.

Evans, R. D. (1941). "Applied Nuclear Physics." *J. App. Phys.* **12**, 260.

Hamilton, J. G. (1942). "The Use of Radioactive Tracers in Biology and Medicine." *Radiology*, **39**, 541.

Hevesy, G. (1948). "Radioactive Indicators." New York and London: Interscience Publishers.

Kamen, M. D. (1947). "Radioactive Tracers in Biology." New York: Academic Press.

Lawrence, J. H. and Hamilton, J. G. (1948). "Advances in Biological and Medical Physics." Vol. 1. New York: Academic Press.

Mitchell, J. S. (1947). "Applications of Recent Advances in Nuclear Physics to Cancer Research." *Brit. J. Cancer.* **1**, 1.

Seaborg, G. T. (1947). "Artificial Radioactive Tracers. Applications to Chemistry and Medicine." *Science*, **105**, 349.

University of Winconsin Press. "A Symposium on the Use of Isotopes in Biology and Medicine." 1948.

ROUND THE FOUNTAIN

FROM the beginning of this Journal in 1893 it has been the custom to publish, from time to time, light verse and humorous articles, Snatches of conversation, "howlers" and witticisms also made their appearance, often under the heading *Round the Fountain*. There is no record in the minutes of the Publication Committee of the original decision to publish a collection of these in book form. The Editor at the time was R. B. Price, whose verses, then and in all subsequent editions, have been unrivalled. We have been unable to find a copy of this first edition of 1909, but it would seem to have been a paper-covered volume of about 100 pages, probably sold at half-a-crown.

There were new editions in 1912 and 1922 (the latter reprinted in 1923), each one adding new material—forty pages in the case of the third edition. The editors at that time were proud to announce that there had been no increase in the pre-war price of two

shillings and sixpence. With this edition there disappeared the aim of making a profit to be devoted to the Nurses' Home.

The fourth edition (1927) was more ambitious. Many line illustrations for it were specially made, and these, with the usual addition of new matter, brought the size up to 200 pages. The paper-covered edition was now sold at three-and-six, but other copies were bound in dark blue cloth, with a paper label on the spine, to be sold for seven shillings and sixpence. This edition was sold off during the last war, when there was an acute shortage of storage space—so effectively that it was difficult to find copies of it for the preparation of a new edition.

This, then, is the fifth edition, and stands on a firm base of previous popularity. Some of the verses in *Round the Fountain* have become known all over the world. They have been reprinted, with and without permission, in medical journals as far afield as Canada, Australia, and the United States, probably in many other places. Such as "The Battle of Furunculus" are now classics of light medical literature: they appear again, their wit undimmed by the passage of years.

For the rest, we have eliminated some that were no longer topical, revised one or two, and added what seems to be the best of the material available since 1927—to a total of 243 pages. The whole is arranged in chronological order, and decorated with some of the old drawings, some refurbished, and some new. The frontispiece is taken from a pen-and-wash drawing by Hanslip Fletcher, which hangs in the Clerk's Office. The binding is red cloth boards, with gilt title stamped on the spine, and on the front the Arms which appear at the head of this column.

The quality of paper, typography and binding we believe to be above that of previous editions, and we are exceptionally fortunate to be able to offer the book for sale at the moderate price of four shillings.

INSTITUTO PUTTI, CORTINA D'AMPEZZO. Completed by the Italians in 1938. Used by the Germans during the war in Italy, and subsequently by the British for the treatment of ski-ing accidents, 1945-46. (See "Ski-ing Injuries," by E. D. Vere Nicoll, in the December issue.)

MACKENZIE'S

By W.G.W.

On August Bank Holiday, 1887, I entered Mackenzie's to " do " my 20 midwifery cases, fortified by some classes held by W. S. A. Griffiths, and by following Matthews Duncan around his ward " Martha " as his clinical clerk.

There were about ten of us and we had to stay on one month, so that I had about 30 births, within an area bounded approximately by the City Road, Moorgate, the River, Fetter Lane, and the south side of King's Cross, with Clerkenwell the main area. One husband came all the way from Caledonian Road because his wife wanted a " Bart.'s " doctor.

The high birth-rate, the dense population, and the rareness of maternity homes ensured that we were all kept busy. It was our earliest real responsibility, and though unqualified we were known and addressed as " Doctor."

On the night of my arrival I was called out, and attended my first case. I found the woman in bed with four children, the latest just born, rather to my relief, and only the placenta awaiting attention.

" Mackenzie's " was a house between St. Bartholomew the Great and the meat market (*see photo*), and opposite was a large drinking trough for horses, in which the urchins of the neighbourhood used to bathe naked, with a scout or two watching for police.

" Mackenzie's " is the whole of the house over the butcher's shop; the entrance being inside the archway, in Cloth Fair.

The alternative to " Mackenzie's " for the students was a nursing maternity home, but this was rather scorned by the "Mackenzie's" folk. There were too many pupil midwives, and it was alleged that the men too frequently saw only the " breech presentations " of the midwives leaning over the labour bed and obstructing the view. Responsibility was lacking.

There was much poverty, and we often had to obtain and supply milk and other necessaries for mother and child, and sometimes to wash the mother and the baby. We were reimbursed from a " Samaritan Fund " at the Steward's Office.

Some of the District was rough and disreputable—on one occasion a policeman told me not to go down alone an entry from Barbican: I did go, and never heard of any molestation of any of us, but much gratitude.

How the patients avoided Puerperal Fever is difficult to explain. As a rule the surrounding circumstances were most insanitary, and vermin were plentiful. I think there was no case of Puerperal Fever among the two to three hundred cases that hot August.

At our call we had not only our fellow students but the Obstetric H.P. in the

Triplets at " Mackenzie's," 1905. On the left the proud father; centre, the extern, H. Gauvain (later Sir Henry); on the right, Scott, whose case it was. There was a ten-shilling sweep on triplets, only paid if the student in charge made an antenatal diagnosis.

(These photographs were kindly lent by Dr. Philip Gosse.)

BARTS IN THE BELFRY

THERE is but little belfry in this play; it is all bats. "Rat week in Rome" could not produce better organised confusion than did Bryan Bailey on whose shoulders the first drops of a veritable shower of laurels must fall. His raw material was moulded into the most ingenious of shapes in a manner faultless from in front of the curtain, whatever may have been the tangled skein behind. Nothing of the amateur appeared, even in that most exacting of professional gestures the feeling of the pulse which "Dr. Brown" performed in such a thumbless manner. He, at least, has not wasted a moment since leaving Charterhouse Square!

The play itself is of little consequence, the lightest of the very lights, written in 1937 as a deliberate vehicle for the art of Miss Lilian Braithwaite. At least, we thought, there must be some actress of great experience, in our midst. Aileen Ryan, perhaps? But, no. There she was, to be sure, but listed among the light weights: almost amongst that strange bunch of also-rans, bracketed together in a happy quartette of mere "Guests." The new Star appeared—Janice Owen: a newcomer to Bart.'s; almost a newcomer to the stage and, but for a mere score of years, a newcomer to the world itself. Playing the aunt she must take it as a compliment that she seemed much older than she is; perhaps not quite old enough, but Miranda was not elderly. Personality and poise were there; she held the audience, and the centre of the stage, as Miranda should. We wondered at her word perfection in such a long and exacting part; perhaps there was a slight monotony of tone, and she did not always wait for her laughs but these are criticisms of an excellent performance. The others played round their centre-piece unselfishly and capably. Edward Boyse seemed overwhelmed by his efforts in fathering such a brood and was convincingly self-effacing. Frank Almond as Jerry could not have been more natural. He seemed to live in the house and was undeterred by part or audience. Full marks for him. Janet Nye, and Carmen Rant, the Morton girls, were different enough to be sisters, and bold enough for the apocryphal parson's daughters. Laurels to them for their naturalness and skill. What a rascal Edward Morton had to be: Geoffrey Singer was most accomplished and capable, but not quite convincing. Lady Carnworthy probably chose the better of the two but Anne Crabtree was not the sort of girl to care twopence for either of them. Her faint was good enough to be true. Harold Shaw could never have won Nora; but he could never have won anything in that blazer—Denis Bartlett must get a new one—the pockets were way up out of his reach. He was the personification of "Saxon interbreeding" but the part was overdrawn by authors rather than actor. The Master of Gamaliel College and Sir Charles Carnworthy had more fun in the study than on the stage; Roy Dickman had spared a few minutes from his car exports at Coventry to enter the Belfry but Paul Biddell seemed more like his general manager than a Master! Blame the authors for that too.

What can I say of the others? Teddy Clulow gave us his views on engagement-breaking and went on with the party! Aileen Ryan, by a brillant momentary appearance, showed that "you can't keep a good girl down." The Guests enjoyed themselves and what more can you expect of guests. I have forgotten Peter Moyes — but he won't remember anything about it!

Everyone was splendidly audible. Nothing fell over—an ashtray now and then perhaps, but what of it—and the voice of the prompter was stilled — a pity, because Marjorie Franklin has a very pleasant voice. John Pittman was too busy to be on the stage but without him there would have been no play.

We missed the flowers at the end, or were they at the First Night? Perhaps my bouquets, given gratefully, will suffice.

V.P.

---

hospital, and beyond him the Obstetric Physician. We seldom had to send for these No maternity cases were taken in Bart.'s at that time.

The second Great War obliterated "Mackenzie's," but those of us who worked there will always remember the interest and advantage of acquiring our first responsibilities in the Profession, in such a rather romantic fashion and place.

August 2, 1949.

"Mackenzie's" is mentioned several times in "Round the Fountain." "The Journal of Dr. Revlyn-Blood" (p. 83) is a Penysian description of the work there; and "The Passing of Mackenzie's" (p. 23) a lament for its dissolution.-Ed.

A CASE OF CHRONIC ULCERATIVE COLITIS

ASSOCIATED WITH SEVERE INTRACTABLE PYODERMA GANGRENOSUM

By FRANCIS M. SHATTOCK

THE term colitis indicates an inflammatory condition of the colon. This condition may be the result of either a specific or a non-specific infection. It may also be divided into an ulcerative and a non-ulcerative type, of which the non-specific ulcerative colitis is the type most likely to be referred for surgical treatment.

Next to cancer chronic ulcerative colitis is probably the most serious disease that attacks the digestive tract of man, and of those patients requiring hospital treatment for an alimentary disease between a fifth and a third of them are suffering from chronic ulcerative colitis. In this respect it is worth while remembering the ancient name for the disease—colitis ulcerosa gravis.

The **ætiology** is still somewhat obscure. The disease occurs usually between the ages of 20-40 years, the sexes being equally affected. Thus it is seen to be a serious economic liability.

Few cases were reported before 1919, when Logan reported a statistical survey of 117 cases, and in the following years it was regarded as a grave entity.

A number of views have been advanced as to its ætiology, which may be summarised, briefly, as follows:—

1. That it is an end stage of an infection by the coli-typhoid group of organisms.
2. That it is an infection with a variety of organisms, which are normal inhabitants of the bowel and become virulent in association with a failure of the body's defence mechanisms, such as mucosal injury.
3. That it is due to a deficiency of vitamins, minerals and other substances; but this theory appears rather to be "putting the cart before the horse."
4. That it is due to a disturbance of the body's metabolism. Thus it may occur in diabetes and goitre.

Various facts seem to destroy these conceptions of its ætiology, and the most that can be said is that there are some important factors in the causation of the disease : (a) a toxin, (b) a vitamin deficiency, (c) an irritant, (d) a preceding inflammation, (e) an allergy, and (f) an emotional disturbance.

Some authorities believe that the initial factor is psychological. Murray conducted a psychological investigation on a dozen patients and found that the outstanding traits consisted of an emotional immaturity and fearfulness—thus diarrhœa is an infantile response to fear. Seven of his female cases had mother traits and a conflict of marriage and mother tie, and five had vague sexual conflicts. Sullivan, in 1936, maintained that there was a psychogenic origin in 60 per cent. of cases—though not all of his cases could be proved to be chronic ulcerative colitis.

Wittkower, in 1938, examined 40 cases and found psychogenic abnormalities in 92.5 per cent, but probably they were not a representative group of patients.

Present evidence fails to convince one that a causal relationship has been established in the majority of cases.

The **complications** of the disease may be divided into three groups. The common complications consist of polyposis, strictures of the large intestine and arthritis. Less common are perirectal abscesses, cutaneous lesions, malignant changes and perforation. The least common are renal insufficiency, endocarditis, exanguinating rectal hæmorrhage, nutritional œdema and ocular diseases.

Primarily there is a diffuse inflammatory reaction in the mucous membrane of the colon beginning at the lower end of the rectum and extending upwards—though in 5—15 per cent. of cases it may be segmental with no evidence of disease in the recto-sigmoid segment. The second stage is characterised by an œdema of the mucous membrane which is diffuse, involving the previously hyperæmic areas. The mucous membrane now looks thick, red and boggy, and is easily traumatised. The third stage reveals the presence of ecchymotic spots which are yellowish and are miliary abscesses; finally these break down and form ulcers. There may also be co-existing secondarily infected ulcers. Healing occurs by the deposition of fibrous tissue in the mucous membrane, leaving pock-like scars, which may give rise to localised strictures or huge abscess cavities. The mucosal tags between the ulcers heal and become

rounded, fibroblasts proliferate and cause contraction with subsequent cicatrisation. The pseudopolypi are the result of proliferation and œdema of the areas of mucosa remaining between the ulcerating areas.

Pyoderma (*Ecthyma*) *gangrenosum* is a dermatological lesion which when present is invariably associated with ulcerative colitis. It was originally described by Goeckerman and O'Leary in 1932 and many subsequent observers have reported a similar condition. The early lesions may be pustules, bullæ, or nodules, which rapidly break down producing ulcers, surrounded by a bluish-red halo, which spread rapidly and extend deeply. The advancing border is œdematous, purple-red, undermined and exuding pus.

The **differential diagnosis** of ulcerative colitis lies between amœbic, tuberculous and the so-called " mucous " colitis, food poisoning, typhoid, dysentery, polyposis and carcinoma.

On **examination** the patient presents typical facies, the face being drawn, anxious and sad, with a look of depression and exhaustion, and a grey-yellow pallor. There is also a noticeable loss of weight and anæmia. Occasionally there is a history of constipation, as the hard fæcal masses will not pass the diseased rectum, but usually there is a history of very frequent stools—since once food has passed the ileo-cæcal valve the remaining bowel consists only of a narrow tube. A history of straining, griping pain and tenesmus may also be obtained. There may also be a history of abdominal pain and of exacerbations and remissions of the course of the disease.

Care must be taken to get an exact description of the stool—its size and shape, the amount of control the patient has, the presence of blood, pus and mucus, whether the stool is liquid, mush, foamy or bulky, and also the presence, or absence, of bloody discharges in relation to defæcation.

Other aids to diagnosis consist in a microscopic examination of the stool for red blood cells, pus cells, acid-fast bacilli, parasites and bacteria, and also proctoscopy, sigmoidoscopy and X-ray examination. It is a wise course for a barium enema to precede a barium follow through, as in this way the presence of a stricture may be discovered.

Treatment : This may be either medical or surgical. Many patients respond well to careful medical treatment, but the intractable cases are in need of surgery—and often the patients are extremely ill by the time that the decision is taken to undertake surgical treatment.

In these cases pre-operative care is of great importance and consists in combating the anæmia, dehydration, protein and vitamin deficiencies, all of which are often gross, and also in the chemotherapeutic treatment of the bowel.

Various methods of surgical treatment are in use, some of which have been abandoned (such as appendicectomy), the underlying principle being that of excluding the affected bowel from the activity of the alimentary tract. This may be done by a cæcostomy; colostomy; ileo-sigmoidostomy — including colectomy with ileo-rectal anastomosis; ileostomy and colectomy—often associated with an ileostomy. A more recent form of treatment is that perfected by Devine, which consists in a four-stage sub-total colectomy.

Should the operation aim at offering a patient a life of reasonable comfort and probable semi-invalidism with an ileostomy, or should surgery aim at being more radical—with the chance of increased comfort for the patient? It must be pointed out that an established ileostomy is no more difficult to manage than a colostomy and often no more fluid in its discharges. In fact one patient who was recently in the Wards is leading a perfectly normal life with an ileostomy and has since married. On the other hand, a number of patients consider an ileostomy to be an over-heavy burden on their social activities and though willing to continue yet are anxious to have normal bowel function re-established.

Devine devised an operation which may be undertaken on fairly poor cases, involving a temporary ileostomy and a final sub-total colectomy.

The cases to undergo this type of operation must be carefully chosen. It is impossible if the rectum is badly diseased.

The case of P.C. will be described. He is the first case to have been treated by this operation in St. Bartholomew's Hospital, and probably the first case in London.

At the age of 17 the patient suddenly developed diarrhœa with blood and mucopus, associated with severe pain, opening his bowels up to 12 times a day. Sulphaguanidine and blood transfusions brought about a slight improvement, which continued until he was symptom free in June, 1946, five months after the onset of the disease.

The next attack commenced in September, 1946, when he was treated with retention enemata of guiacol, heparglandol and sulphathiazole. At the end of the month abscesses began to develop on his left arm and right leg; they were incised and drained, but commenced to slough, necessitating grafting at a later stage. The colitis subsided and he was discharged in March, 1947.

In May he was re-admitted with a further attack, and it was noticed that the ulcers had again broken down. After seven weeks he was discharged with the ulcers still not healed, but the colitis having subsided.

In October, 1947, there was another attack of colitis and he was re-admitted during which time further attempts were made to heal the ulcers, which were re-grafted.

A right lumbar ganglionectomy was performed in April, 1948, and another graft applied to the ulcers on his leg. These slowly sloughed, and pinch grafts were applied at the end of May, by which time the colitis had improved sufficiently to enable him to be discharged.

In July he was re-admitted and the ulcers were once more re-grafted. The colitis had again relapsed. He was treated with injections of liver and folic acid. Sigmoidoscopy was carried out and showed the presence of numerous polypi. Barium enema showed that the colon was ragged in outline and also showed the typical loss of haustrations. At the end of July the ulcers had completely broken down and were discharging copiously. In view of the dramatic improvement with streptomycin it was decided that surgery was contra-indicated.

The patient was discharged and remained well, except for an attack of arthritis, until October, when the colitis returned and the ulcers again broke down. He also had an arthritis of the right ankle and the left elbow. The following month he was seen by a psychiatrist who reported "... This young man is of a mildly nervous and obsessional type. The background is what one expects very frequently in many psychosomatic disorders, including ulcerative colitis. There is nothing specific about it—it is part of the whole personality and I do not think that it could rationally be treated with any expectation of bettering the ulcerative colitis."

In November, 1948, the patient was admitted to St. Bartholomew's Hospital. He was grossly anæmic and weighed 8 st. 8 lbs.—during his attack of colitis his weight had dropped to 5½ st. Physical examination revealed nothing abnormal, apart from the scar of the ganglionectomy, and ulcerations on the right lower leg.

After admission a course of sulphathalidine with large doses of vitamins and protein—administered as Prosol—was commenced. Sigmoidoscopy revealed widespread pseudopolyposis in the rectum and recto-sigmoid flexure, with areas of bowel between the pseudopolypi denuded of mucosa. There was no active ulceration nor bleeding, and no excess of mucus. It was decided to undertake subtotal colectomy.

The first stage was undertaken on December 28, 1948. The abdomen was opened through a midline subumbilical incision. The terminal ileum was identified, mobilised and clamped with two De Martel clamps, fig. 1, A and B. The sigmoid colon was similarly treated, fig. 1, C and D. The ileum and sigmoid colon were then divided and the ends brought out through the incision, in the order shown in fig. 2. A and D were sutured together to form a spur, with A projecting 1½ ins. beyond D to act as a temporary ileostomy, and later supported with a vaseline

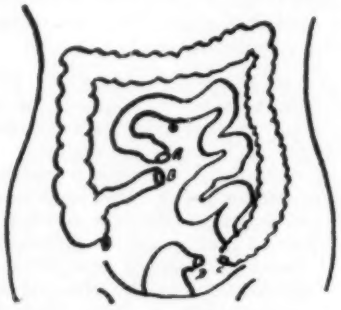


FIG. I

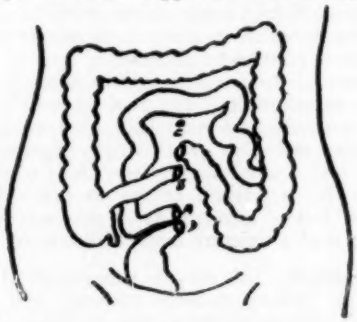


FIG. II

gauze roll. The clamp was removed from C and a Paul's tube tied in. The abdomen was closed as far as possible about these stumps.

The next day a Winsbury White catheter was tied into the ileostomy, the catheter being cut off about three inches from its enteric end, and being connected to a plastic right-angled tube, to the other end of which was attached an open drainage apparatus. This method enables the angle piece being disconnected and a catheter inserted in cases of obstruction of the terminal end of the ileum.

On January 2 the sigmoid clamp sloughed off, the Paul's tube on January 3, and the upper clamp on January 4.

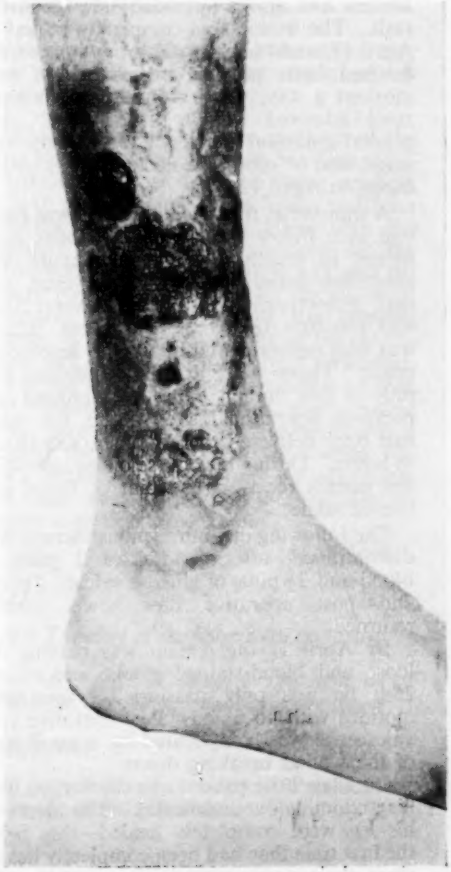
On February 11, the patient was considered fit for the second stage, which consisted of the amputation of the ileostomy and the application of an enterotome, which was brought out through the upper hole of a colostomy box.

It was found that post-operative nursing was impossible unless the box was removed, which involved temporarily unscrewing the enterotome—this has now been made easier by the adaptation of a box allowing the enterotome to remain fixed.

A small semi-solid stool was passed per rectum on February 17, and after this date the patient passed from one to two semi-solid stools per rectum daily.

From the commencement of operative treatment the ulcers on the leg slowly improved.

Pyoderma, 3.11.48.



Pyoderma, 18.3.49.

The third stage—the closure of the ileostomy and sigmoidostomy was undertaken on March 3. The combined opening of the ileum and the sigmoid colon was freed by means of an incision encircling it. The lower end of the ileum and the upper end of the sigmoid were then freed from surrounding tissues and the exposed mucous membranes sutured in layers. The extraperitoneal anastomosis was thus effected and the abdominal wall closed in layers.

This operation meant that normal bowel function had been restored and that the patient was left with the equivalent of a double-barrelled colostomy—consisting of the isolated colon (C and B).

Post operative convalescence was complicated by the patient developing a small stitch abscess and also a sulphonamide sensitivity rash. The wound was completely healed by April 11, and for a few days previous to this he had been passing an average of four motions a day, which consisted of a loose stool admixed with a little blood. His general condition was very good, and the final stage, that of subtotal colectomy, was undertaken on April 12.

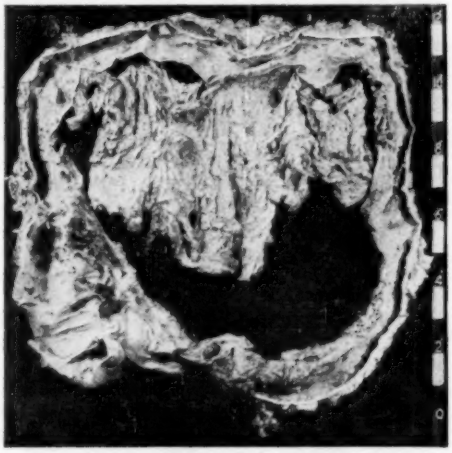
A transverse, transrectal incision was made one inch below the umbilicus, about eight inches in length. The right flexure and ascending colon were easily delivered, and their mesentry divided. The transverse colon was similarly treated. The splenic flexure was then delivered and finally the descending colon. There were no gross adhesions and only a few minor adhesions—around the previous operational site. After the colon had been delivered the abdomen was closed in layers. During the course of the operation the patient received one pint of blood and one of saline.

The following day intravenous therapy was discontinued, after a total of 2 pints of blood and 3½ pints of glucose saline. On the 2nd post operative day bowel sounds returned.

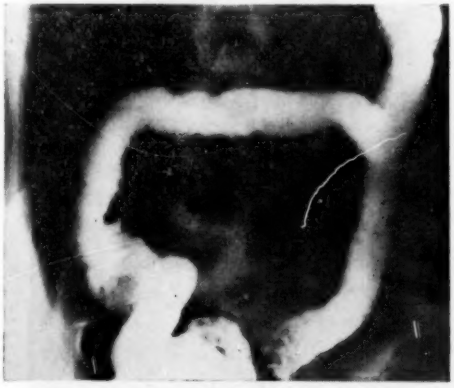
By April 17 the patient was passing 3-4 loose and blood-stained stools, and by the 25th he was only passing 2-3 semi-solid motions with no blood. Post-operative convalescence was complicated by a small area of the wound breaking down.

On May 9 the patient was discharged with his abdominal wound healed. The ulcers on his leg were completely healed—this being the first time they had been completely healed since their appearance in June, 1946. On discharge he was passing 2-3 solid to semi-solid stools a day.

He was seen again on July 11 when he was re-admitted for sigmoidoscopy. During the last two months he had put on 2 lbs. in weight and was feeling extremely fit—the day before his re-admission he had bicycled 50 miles. There was no evidence of recurrence of ulceration of his legs, all the scars being quite firm. He had complete rectal control, passing semi-solid stools twice a day, with no blood or mucus. Sigmoidoscopy showed a small ulcer at 3 o'clock above the ano-rectal ring and a papilloma was seen at 5 o'clock, high up in the rectum. This was excised and pathologically was shown to consist of



Colon removed at operation, 12.4.49.



Barium enema, 15.6.49.

normal rectal mucosa overlying connective tissue, in which a number of chronic inflammatory cells could be seen.

Summary: A case of chronic ulcerative colitis with associated severe pyoderma has been described with its treatment, which represents an advance in the surgical treatment of chronic ulcerative colitis. It not only restores bowel continuity, but since it is carried out in four stages it may be undertaken on patients who otherwise would be regarded as unfit for surgical treatment.

The case is also of interest on account of the severe and intractable associated pyoderma which healed completely once the primary cause had been effectively treated.

I am very grateful to Mr. Rupert Corbett for allowing me to report this case and for the assistance that he has given me.

References:—

The Management of Colitis. J. A. Bargen, 1935.

Gastro-enterology. H. L. Bokus, 1944. ii, 565.

Colitis. British Surgical Practice, vol. 3. R. Corbett.

Disease of the Skin. Ormsby and Montgomery. 1948. p. 405.

Subtotal Colectomy and Colectomy in Ulcerative Colitis. Sir H. Devine. B.M.J. 17.8.48. p. 127.

Photographs by the Department of Medical Photography, St. Bartholomew's Hospital.

THIRTEENTH DECENNIAL CLUB

The most frequent greeting at the Thirteenth Decennial Club's third meeting in Charterhouse Square was "My dear chap, are you married? And how you're losing your hair!" Emphasis on these two distinct, but perhaps not unrelated, natural phenomena is a reflection on the age of the club. It is mature enough for its members to be attacked by both eventualities but sufficiently junior for their occurrence to be of interest.

The meeting was as successful as a party congress, half as noisy, and a hundred times as cheerful. This was largely the result of hard work by the secretaries, Kingsley Lawrance and David Pugh, and the particularly praiseworthy efforts of their colleague Malcolm McIlroy. The constitution of the Club has been altered and difficulties with the licensing laws smoothed over. Unfortunately there are still some snags to be faced: although the Club voted decisively for a buffet-and-bar affair instead of a dinner, it may not be possible to hold the meetings in Charterhouse in future and members may have to take themselves off into the surrounding countryside.

Other contributors to the pleasure of the party were the Chairman, Iain MacDougall—a striking justification for the above greeting, on both counts—and Jimmy Smith and John Atteridge, who played the piano with the ingenuity they once demonstrated on the unco-operative instruments in R.S.Q. and the billiard room at Hill End. As the members reiterated the adventures of the straying Weaver, of O'Reilly's daughter, of the elderly highly immoral, but useful lady of Jerusalem, and of the inhabitants of Kerriemuir on that wild, rousing, and thoroughly psychopathic night—glancing round their companions they recalled the uncomplicated days when life was a straight fight with only the examiners and there was no one but the landlady to explain it away to afterwards.

ALAN TOIS

THE JOURNAL

Contributions must reach the Editor by the first Tuesday of the month for inclusion in the following issue.

We announce the resignation of the Editor, Mr. G. C. R. Morris. He will be succeeded by Mr. M. Braimbridge. Mr. J. A. Williams has been appointed Assistant Editor.

THE CLINICAL JOURNAL

From January, 1950 the *Clinical Journal* will be published monthly. A reduced subscription of 21s. per annum will be accepted from registered students.

CHANGE OF ADDRESS

Dr. R. D. Reid to The Halt, Beach Road, West Mersea, Essex. Tel 321

SPORT

RUGBY CLUB

November 12, v. Old Haberdashers. Home
RESULT: Won 8-6

This game opened in a heavy squall and the ball was blown around in a bewildering fashion. During the first five minutes the ball was well heeled from a loose scrum, was handled by all the three-quarter line, leaving Picttoll to touch down in the corner after a good run of 30 yards.

After this, the squall died down and so did the standard of Bart.'s play. After some scrappy play, Murphy and Clane enjoyed a fine piece of interpassing and Clane scored beneath the posts, Murphy converting.

Nothing further can be said of Bart.'s play during the afternoon. Apathy set in, and all semblance of team work fell by the wayside. The forwards had a particularly bad day, and the least said about it the better.

November 19, v. Stroud
RESULT: Lost 0-14

The standard of play was better than last week but the shadow of five hard games played in eight days in Cornwall and Devon still hangs over the side.

The backs played well, but with little of the ball coming their way did not have many chances to form attacking movements.

The forwards are still not playing together and are allowing their opponents to break through in the line-outs.

Hard play and dash must be achieved if we are to do justice to our record on tour.

We are very pleased to record that G. Mears was selected by United Hospitals R.F.C. to play against Edinburgh University at Richmond and against Dublin Hospitals at Dublin.

November 26, v. Saracens. Home
RESULT: Lost 0-3

After a shaky start during which the Saracens scored their only try, Bart.'s settled down to the style of rugger which they played on tour.

There was no comparison between Bart.'s today and Bart.'s during the last two matches. The tackling was low and successful, the defence extremely sound. It was great to see the pack "going in" as eight men and gradually gaining the ascendancy over the Saracens pack. Heylings and John were outstanding and were always on the ball after following up hard. There was no doubt about our superiority during the last 15 minutes; play was inside the Saracens' "25" but their defence managed to hold out.

During the second half, Davies played at stand-off and was successful in getting his three's going. All the backs attacked in convincing manner and their defence was unshakable.

After this match we feel that the team has gained confidence and will go forward to greater successes.

HOCKEY CLUB

1st XI Results

Saturday, November 15, v. Emanuel College (home). Won 3-2

Saturday November 12, v. Lensbury (home). Lost 1-4

Saturday, November 19, v. Midland Bank (away). Won 2-0

This was a hard-fought, rather scrappy game, played under rather difficult conditions.

Bart.'s opened with a quick raid, but for the next quarter of an hour were pressed; last-ditch defence being the order of the day. Hicks, in goal, was continuously under fire, but succeeded in giving every bit as good as he got.

After half-time, when there was still no score, the situation was reversed. The forwards combined well, and it was not long before a good movement ended with Hurst running in to score from close range. The lead was increased by Roche ten minutes from time. Apart from Hicks, Ainley-Walker was outstanding in defence, and the forwards as a whole played together better than previously this season.

Saturday, November 26, v. Orpington (home). Drawn 1-1

It was pleasant to find in the ranks of the opposition, an old friend in Dr. M. D. Mehta, who played no mean part in helping his side to share honours with us in a very exciting, even game. Soon after the bully-off, the hospital defence was in difficulties, the chief trouble being slowness in clearing, and in the opening stages a pair of brand new white pads, with, of course, Hicks inside them, performed miracles in the goal-mouth. It was, however, Bart.'s who scored in the first half, when the 'keeper saved a hard shot from Whitting, only to be beaten by a first-time shot by Roche off the rebound. Orpington deservedly got the equaliser late in the second half, when both goals had several narrow escapes. The forwards on both sides were erratic in front of goal, but the Bart.'s right wing pair always looked the most dangerous.

Wednesday, November 30, "A" XI v. Inns of Court (away). Won 7-1

Saturday December 3, v. Ealing Dean (away). Lost 2-4

GOLF CLUB

2nd XI Results

Saturday November 12, v. Association of Architects 1st XI (home). Drawn 3-3

Saturday, November 19, v. Midland Bank II (home). Won 2-1

Saturday, November 26, v. Orpington II (away). Lost 2-4

Saturday, December 3, v. Ealing Dean II (home)

BEVERIDGE CUP WON BY BART.'S

The replay of the final of the Beveridge Cup between Guy's Hospital, the holders, and Bart.'s took place at Sundridge Park on Wednesday, November 16. After a very close match Bart.'s were successful by four games to three, with one halved, thus winning the trophy for the first time.

Conditions for play were good. The course was in fine order. There was no rain and only a little wind. The Hospital team included six of the players who drew the first final on October 26. M. Cassels and G. E. Thomas replaced D. Aubin and J. Graham-Stewart for the remaining two places.

The games showed a striking similarity in result to those of the earlier final, so that at one time it seemed yet another replay would be required.

In the top single L. R. Gracey again beat Ian Caldwell. Gracey had the advantage of playing on his home course, and thanks mainly to this local knowledge, won by 4 and 3. D. H. Rushton found J. Anderson in irresistible form and lost 6 and 5. In the next game M. Braimbridge showed his usual steady form and won easily against J.

Wilson by 7 and 5. G. E. Thomas, handicapped by an injured wrist, put up a fine fight against J. Harrington but eventually lost 3 and 2, making the score two all. Soon R. Dreaper came in an easy winner against M. Quelch by 7 and 5, but this was offset by C. J. R. Elliott, who just lost a close game to J. Crolesworth on the 18th—3 all. Next M. Cassels scored a vital win against J. Mepsted. After being three down, Cassels squared the match, and eventually won it on the last green. The whole result now depended on the game between J. M. D. Grant, the Guy's Captain, and R. V. Fiddian. It was a match full of fine golf, with Fiddian the better up to the green, but unable to clinch the issue because of weak putting. Grant was one up with one to play so Fiddian had to win the last hole to halve the match. Both players reached the green in three. Grant was weak with his first putt and then missed the short one, leaving Fiddian with a two-footer for the hole, over which he made no mistake.

Consequently the whole match was won by 4-3 with one halved. This first victory in the London University Cup is a fitting conclusion to what has been a successful season.

BOAT CLUB

UNITED HOSPITALS BOAT CLUB REGATTA

This regatta was rowed off on November 16, from the Thames Rowing Club Boat House at Putney. Conditions were calm, but initially very foggy, delaying the start of the programme by about an hour. Last year Bart.'s met with great success, winning the Junior and Senior Eights, the Pair Oar, and Junior and Senior Sculling events. These results seemed to have stimulated our opponents to greater efforts, so that this year the general standard of rowing was much higher.

We can, unfortunately, only record one success, in the Pairs, won by J. C. M. Currie and D. C. H. Garrod. In the final heat of the Senior Eights Challenge Cup we were beaten by one length by St. Thomas's, who this year produced a very fast and experienced crew.

Results—

Senior Eights—St. Thomas's
Junior Eights—London
Senior Four—Middlesex
Junior Four—St. George's
Pair Oars—Bart.'s
Rugger Fours—St. Thomas's
Senior Sculls—R. R. A. Coles (St. Mary's)
Junior Sculls—J. E. Cullis (St. Thomas's)

Once again the First Eight did most of its training from the boat house of the Kingston Rowing Club and our thanks are due to them for their hospitality. We had a similar crew to that of last year, stroked by J. C. M. Currie, our last year's Captain, but it did not quite come up to the same high standard. The Second Eight, which trained from the University of London Boat House at Chiswick, suffered very badly from a lack of coaching. The Boat Club has now got many promising new members and it is intended to put two Eights into the Head of the River Race in March.

The Club is just about to collect from the boat builders a new Clinker Eight, costing £250, made possible by very generous contributions from official bodies, and from senior and junior members of the College. We wish to record our very sincere thanks that are due to these patrons, and most particularly to our President, Dr. B. W. Town, whose generosity initiated the Boat Fund, and whose enthusiasm and advice is a constant encouragement to our efforts. The new boat will be used for training and racing by our new members, in order that we may raise the standard of rowing throughout St. Bartholomew's Hospital Boat Club.

EXAMINATION RESULTS

UNIVERSITY OF LONDON

Third (M.B., B.S.) Examination for Medical Degrees

October, 1949

Honours

Montfort, F. G. (Distinguished in Medicine)

Pass

Bass, P. H.	Egerton, B. H.	Hooper, E. R. S.	Mendel, Dennis
Brown, H. S.	Facer, J. L.	Kazantzis, G.	Menon, J. A.
Butcher, P. J. A.	Frewen, W. K.	Koster, H. G.	Morley, D. F.
Crook, R. A.	Griffiths, J. D.	Leary, B. D. J.	Reiss, B. B.
Dickerson, R. P. J.	Hayter, R. R. P.	Mehta, J. S.	Rohan, R. F.
Dower, G. E.			

Supplementary Pass List

Part I

Abraham, R. J.-D.	Hacking, S.	Liu, S.	Simmons, P. H.
Bouton, M. J.	Hibbard, B. M.	McCloy, J. W.	Smith, R. V.
Brest, B. I.	Hurter, D. G.	Marsh, G. W.	Stebbings, N. E.
Burn, J. I.	James, D. C.	Moore, G. J. M.	Studdy, J. D.
Carter, F. G. T.	Kaye, M.	Raines, R. J. H.	Wendell-Smith, C. P.
Chorley, G. E.	Lawther, P. J.	Rosen, I.	Wright, A. N. H.
Green, N. A.	Lewis, H. E.	Rothnie, N. G.	Zakon, R.

Part II

Andrews, J. D. B.	Eve, J. R.	Rees, J. H.	Wimborne, D.
Capstick, N. S.	Jones, N.	Vercoe, M. G. S.	Woolfe, J. C.
Cox, J. S.	McCloy, J. W.		

Part III

Brest, B. I.	Holland, W. G.	Rosen, I.	Tannen, G. P.
Hacking, S.			

BOOK REVIEWS

X-RAY DIAGNOSIS FOR CLINICAL STUDENTS AND PRACTITIONERS, by G. Simon. Heffer, 1949, pp x + 207, 180 illus. Price 20s.

This new book on X-ray diagnosis will be of great use to medical students and others whose requirements are less than those supplied by a full text-book of radiology. The main function is to give to students the radiological features of the conditions with which he comes into most frequent contact during the years of clinical study. The correlation of clinical reading with the radiological features of these conditions should be of the utmost value to a student during his course of training.

The illustrations are excellently reproduced, the print and paper are of excellent quality and the material is laid out in a very practical manner. Certain minor errors of spelling and punctuation, which almost inevitably occur in a first edition, are fortunately few and there are only minor criticisms which can be made in an otherwise thoroughly well designed book.

It would probably have been better to include the oesophagus with the gastro-intestinal tract rather than in the section on the chest as this is the method customary in text-books and there is little to be said for the use of the word "Traumatology" which has unfortunately begun to appear in the literature.

There are excellent sections on the physics and technical aspects of radiology which are extremely valuable as an introduction to the understanding of the practical application of radiology.

The author in his description of the function and place of a radiologist in the hospital has stressed his handicaps rather more than his advantages, which perhaps was not altogether his intention, but may convey to the students a wrong impression of the value of the work of radiology to the clinicians.

These, however, are minor fault findings in what is an exceedingly practical, useful and well-produced book conveying to those consulting it an excellent basic knowledge of radiology.

R. A. K. H.

A PSYCHIATRIST LOOKS AT TUBERCULOSIS, by Eric Wittkower, M.D. N.A.P.T., 1949, pp. 152.

Dr. Wittkower, in his book, breaks new ground. He has submitted to psychological analysis about 785 tuberculous patients, to try to find out if there is any psychological reason why they had developed pulmonary tuberculosis and whether their psychological condition had a bearing on their re-action to treatment.

The title describes the contents correctly, for Dr. Wittkower describes his findings and does not claim to have come to conclusions, for he states that controls were not available, but he gives a clear analysis of the cases, and the patients seem to fall into definite classes. No previous experiment on such a scale has been made.

The book will be of great interest to all who have charge of tuberculous patients, however experienced they may be. It is written in a way which does not require psychological knowledge and should be read by all house physicians; they will find it of the greatest help in understanding and dealing with patients suffering from pulmonary tuberculosis.

OPHTHALMIC MEDICINE, by James Hamilton Doggart. J. & A. Churchill Ltd., 1949, pp. x + 329, 28 coloured plates, 87 text figs. Price 32s.

Only a select few in this country have attempted the difficult task of writing a text-book on the medical aspects of ophthalmology. In the wake of the late Sir William Gowers and Foster Moore comes J. H. Doggart with this admirable book on "Ophthalmic Medicine" succeeding by 24 years Foster Moore's second edition of "Medical Ophthalmology," published in 1925. The qualities necessary to do full justice to this subject are considerable. The author of "Ophthalmic Medicine" has brought to this work the stored riches of his extensive clinical experience, a wide knowledge of his speciality and of its many contacts with the main body of medicine, the application of his philosophic mind to controversial matters, and an ease of expression in good English which makes the reader enjoy the book as an absorbing narrative. It is touched and enlightened here and there with advice which shows clearly the author's insight into the art, apart from the technique, of practising medicine. The book has achieved the author's purpose in its presentation of a comprehensive survey of the disorders and diseases of the eye in association with pathological changes in its adjacent structures and in remote parts of the body. In this work he has correlated recent discoveries with the traditional aspects of medical ophthalmology.

The physician will be much helped by four well-written chapters on the history of a case, symptoms, methods of examination and physical signs, and the ophthalmologist by the admirable dissertations on allergy; vitamin defects; inflammatory syndromes; focal, virus and fungus infections; metabolic disorders, disturbances in endocrine function among other topics of general medical interest.

This book is a praiseworthy attempt to compress into 300 pages all that is sound in the teaching of ophthalmic medicine. It is well illustrated and a fair bibliography is given at the end of every chapter. There is little to criticise adversely. It is evident that a mistake has been made in Plate XX, Fig. 2, where a tigroid fundus is printed instead of that of an albino. Plate 1, Figs. 1 and 2 could be more artistically executed and this also applies to the drawings of a pterygium and a dermolipoma of the bulbar conjunctiva.

The book is well produced and will be valued by physicians and ophthalmologists as a sound contribution to matters concerning both.

H. B. S.

FITNESS FOR GAMES, by F. A. Hornibrook. Heinemann, 1949, pp. 39. Price 2s. 6d.

This small handbook forms a useful introduction to attaining general physical fitness which is necessary if players are to enjoy their respective games to the full.

It is intended primarily for those who wish to develop a sound body as part of a full life.

It could be improved by giving more space to exercises and such useful aids as jogging over the countryside as part of basic training and less to such specialised injuries as synovitis, when medical aid should be sought.

ANKYLOSING SPONDYLITIS, by F. Hernaman-Johnson and W. Alexander Law. Butterworth, 1949, pp. 200. Price 25s.

This book is described as a practical guide to the diagnosis and treatment of ankylosing spondylitis. Its object is to marshall knowledge and experience about the disease and to show that properly applied treatment can bring considerable relief in even the advanced stages of the disease. The late Dr. Hernaman-Johnson, a physician with special knowledge of radiology is responsible for the first part of the book dealing with etiology, diagnosis and treatment; whilst Mr. Law describes the recent methods of conservative and operative orthopædic treatment.

The first part is written in a personal "chatty" style, and sometimes the reasoning is confused. The main criticism is the emphasis laid on wide field X-ray therapy as a curative method of therapy. This method although valuable, has a high incidence of failure and recurrence and has been proved by many authorities to be inferior to more intensive localised therapy to the spine and sacro-iliac joints. The statement that wide field radiotherapy can be carried out with a stop watch and a diagnostic X-ray apparatus is extremely dangerous. One important theme runs through the book, and that is that the proper diagnosis, treatment and care of these patients needs the combined knowledge and team work of physician, orthopædic surgeon and radiologist.

I.G.W.

BIOCHEMISTRY IN RELATION TO MEDICINE, by C. W. Carter and R. H. S. Thompson. Longmans Green & Co., 1949, pp. xi+442. Price 25s.

Seldom is it given to one to review a book which can be so whole-heartedly recommended to the medical student. This is a new book and within its 442 pages are mentioned almost every aspect of biochemistry of medical interest. It is up-to-date in its treatment but gives accounts which are often not as full as may be desired of such topics as Professor Frazer's work on the absorption of fats; the aerobic oxidation of carbohydrates and also biological oxidations in general; the lipotropic effect of choline and the function of methionine as a carrier of methyl groups. This brevity is made more bearable by a very comprehensive bibliography at the end of the book of which the conscientious student will be certain to avail himself. The book is characterised by a number of exercises in practical biochemistry at the end of each chapter which are well chosen and serve to illustrate the fact that the organism is in a continual state of flux. The chapter on physico-chemical considerations is far too fragmentary and while dwelling on pH and buffers extensively, fails to mention the Donnan effect or even to discuss the nature of the cell membrane and the orientation of polar molecules at interfaces. These are surely fundamental. However, as a text-book of biochemistry, the book is stimulating and should be read and pondered over by all medical students. In conclusion I should like to ask one favour of the authors and that is in the next edition, which the popularity of the book will ensure, that they will discontinue the practice of writing formulæ (e.g., the lecithins) in which nitrogen is depicted as a penta-co-valent atom.

B. W. T.

AVIATION MEDICINE, by Kenneth G. Bergin. John Wright, Bristol, 1949, pp. xv+447. Price 35s.

There has been much work on medical problems associated with flight, and the time is ripe for a review of the subject. Dr. Bergin is well qualified to undertake such a task; and he has succeeded in marshalling his facts to show their practical application. The sections of the book cover history, physiology, medicine, psychology and public health in relation to flying. That on psychological considerations is particularly valuable, in spite of the paucity of available information. The text throughout is lucid, there are many good illustrations, and references to the literature (some interesting studies on the effects of immersion are evidently the result of German work on prisoners). This is a useful book, which should help to make air transport safer and more comfortable, and service flying more efficient: and it is very well produced.

ELEMENTS OF FOOD BIOCHEMISTRY, by W. H. Peterson, J. T. Skinner and F. M. Strong. Staples Press Ltd., 1949, pp. xi+259, Figs. 21. Price 21s.

The title of this book encourages one to think that it deals with foods, their analysis and composition, especially with regard to their content of the accessory food factors and the trace metals. If the book really dealt with these points adequately it would have been a welcome addition to biochemical literature. As it is, in seeking to encompass too wide a field, it fails in its task. The style of writing is simple and lucid, but the book deals most inadequately, at least from the medical point of view, with almost every biochemical topic; from the oxidation of carbohydrate, the conversion of carbohydrate to fat, the absorption of fat from the intestine, ketogenesis, etc., to the structure of proteins—none of these topics is dealt with in sufficient detail even for the requirements of the London 2nd M.B. The chapters on the mineral elements in nutrition and on the vitamins are of greater value. The book contains a deal of information, and it is a pity that it could not have been kept within the field in which the authors' experience undoubtedly lay.

B. W. T.

MEDICAL EDUCATION, by Ffrangcon Roberts, M.D., London. H. K. Lewis & Co. Ltd., 1948, pp. 170. Price 12s. 6d.

Dr. Roberts surveys medical education as organised at present, discusses its organisation at the various stages, and makes recommendations as to its reform. The book, while being well written and very readable, too often tends to diffuseness. The conclusions could with advantage be stated more concisely and the arguments rounded off more completely. The book is full of interesting criticism.

Fundamentally the book is orthodox—it does not recommend changes outside the matrix of the present system of medical education. A reform such as the teaching of clinical medicine and the preclinical subjects in parallel to a much greater extent than at present is not advocated. The correlation of structure with function and body with mind is stressed as fundamental in the teaching of preclinical subjects. Dr. Roberts reminds one constantly that medical education does not cease on qualifying and that it is human beings who are being educated.

FRACTURES AND DISLOCATIONS IN GENERAL PRACTICE, by John Hosford. Revised by W. D. Coltart, Lewis, 1949, 2nd Edition, pp. 290, 87 illustrations. Price 21s.

Since the first edition of 1939 the management of fractures has largely been transferred from the general practitioner to the specialist hospital department—for three good reasons, which appear in every chapter of this book: the need for X-rays in diagnosis and in the control of treatment; the importance of correct application of plaster for immobilisation, and special apparatus for traction; and the growing emphasis on complete "rehabilitation," or reablement of the patient. But the G.P. still needs to know what is happening; and the student has to learn. For these purposes, here is an excellent text, readable, simple, well illustrated and up-to-date; admirable in itself, and a source of parochial pride in its authorship.

THE SULPHONAMIDES IN GENERAL PRACTICE, by Edward D. Hoare. Staples Press, 1949, pp. 90. Price 5s.

This little book explains the principles of sulphonamide therapy and the dangers attendant thereto in lucid terms.

The conditions in which they are indicated are considered in turn and where applicable particular emphasis is laid on the relative merits of sulphonamides and penicillin.

A useful work for those in or entering general practice.

NURSING, by Gladys M. Hardy, S.R.N. W. & G. Foyle, 1949, pp. 137. Price 2s. 6d.

This book is presumably meant for students for the Preliminary State, and covers Part 2 of the syllabus, except First Aid, for half a crown. There are too many errors, like "statum—immediately"; "crastino—tomorrow" (page 65); "maloena" (page 80); "dermos—the people" (page 131). Elaborate production at such a price is not to be expected, but the reviewer's copy came to pieces before it had been read. W. H.

BACTERIOLOGY AND PATHOLOGY FOR NURSES, by E. Irene Clark. Faber, 1949, 2nd Edition, pp. 320. Price 18s.

A nurse in training would use this as a reference rather than as a study book. It is the ward sister and tutor who would find it of most value. The scope is wide, and the answer to most questions that a nurse is likely to ask on this subject can be found here. For instance, there is an account of prothrombin values, and of the Rhesus factor. The viewpoint of the author is strictly that of the pathologist, so that sections such as tuberculosis are disappointing to a nurse who needs a wider view. The diagrams and coloured pictures are acceptable, and the style straightforward and convincing. W.H.

SHORT MANUAL OF REGIONAL ANATOMY, by J. A. Keen. Longmans, 1949, 2nd Edition, pp. 164. Price 10s. 6d.

This book should not be necessary: for the student should be able to remember such anatomical detail as he will later use. In practice, however, an aid to revision is often wanted. The method adopted here is to prefix a brief exposition of general principles to a condensed summary of regional detail, illustrated and amplified by excellent diagrams. Whether such shorthand is memorable depends largely on the reader: it remains only to comment that general principles, in anatomy as elsewhere, are often more valuable than details, and to bemoan the emphasis still placed on trivia.

OPERATIVE SURGERY, by Frederick C. Hill, M.S., M.D., Associate Professor of Surgery, Creighton University, Omaha, New York. Oxford University Press, 1949, pp. 698. Price 63s.

A new book on operative surgery is always welcome, especially when so well produced as this volume. But one is a little apprehensive when one finds in the preface that " . . . a different approach has been attempted whenever possible." It is a danger that a book by a single author covering the field of the general surgeon may be too idiosyncratic for general use.

Dr. Hill has written this book for "the intern, resident and less experienced surgeon." The operations chosen for description cover a wide field and are those on the whole usually practised in this country. The descriptions are mostly clear and well illustrated but in some cases do not give enough practical hints and details to help the young surgeon overcome the many and possible difficulties in his way. The book is thus not always the real help which it set out to be.

There are, of course, omissions and misleading practices advocated. Thus pre-operative bronchoscopy is not mentioned with regard to pneumonectomy for carcinoma of the bronchus, nor is the use of radio opaque oil and radiography in the description of the post-operative care of an enpyema. A course not generally adopted comes in the description of partial thyroidectomy. After the first lobe has been removed it is recommended that the patient "should be allowed to wake up and instructed to cough . . . to prove that the recurrent laryngeal nerve has not been injured."

HALE-WHITE'S MATERIA MEDICA, by A. H. Douthwaite. Churchill, 1949, 28th Edition, pp. viii + 532. Price 16s.

This is the first book to be published in revised form since the issue of the 1948 British Pharmacopœia. All the important changes contained in that volume have been included and it has been completely revised in this respect.

It is fortunate that this reputable book should be the first, because it is superior to many of the books which students use, and can be recommended to all; both for its treatment of the subject and because it is up-to-date.

Inevitably in the time interval between writing and publication certain advances are made and material becomes obsolete, but this does not detract from the value of the work as a whole, which is commended wholeheartedly.

The format remains the same as that of previous editions.

MEDICINE FOR NURSES, by W. Gordon Sears, M.D. Edward Arnold, 1949, 5th Edition, pp. viii + 472. Price 12s. 6d.

The purpose of Dr. Gordon Sears in writing this book was to produce one that would enable nurses to pass their Final State Examination. The result is that we are given good succinct records of cases, as in the account of peptic ulcer, but the patient that every nurse would recognise somehow fails to appear. However, most nurses buy a text-book to enable them to pass an examination, and for this purpose this is very good. The account of the infectious diseases, which the general trained nurse must know but never sees, is excellent. The publishers are to be congratulated on producing a book of this class, full of information and of good appearance, at such a price.

W. H.

RECENT PAPERS BY BART'S MEN

*BACH, F. Osteoarthritis of the knee. *Brit. J. Phys. Med.*, N.S. 12, Sept.-Oct., 1949, pp. 124-6.

*——. Rheumatic Diseases International Congress in New York. *Lancet*, July 2, 1949, p. 23.

*BROOKE, B. N. (HARDY, T. L. and others). Ileostomy and ulcerative colitis. *Lancet*, July 2, 1949, p. 5.

*CAVE, A. J. E. Notes on the nasal fossa of a young chimpanzee. *Proc. Zool. Soc.*, 119, 1, 1949, pp. 61-63.

*CHRISTIE, R. V. Penicillin in subacute bacterial endocarditis. *Brit. Med. J.*, Oct. 29, 1949, pp. 950-1.

*EVANS, C. Lovatt. The eighteenth Stephen Paget Memorial Lecture. Physiological Research and the Vivisection Act. *Fight Against Disease*, 37, ii, 1949.

*FRANKLIN, K. J. The history of research upon the renal circulation. *Proc. Roy. Soc. Med.*, 42, Sept., 1949, pp. 721-730.

*—— (and others). Anoxic diversion of the renal cortical blood flow. *Proc. Soc. Exp. Biol. & Med.*, 71, 1949, pp. 339-41.

*GRIFFITHS, E., (and others). The comparative merits of sodium and procaine penicillin given infrequently. *Brit. Med. J.*, Oct. 29, 1949, pp. 958-961.

HAYWARD, G. W. Advances in the treatment of heart disease. *Post Grad. Med. J.*, 25, Nov., 1949, pp. 537-542.

HEADY, J. A. *See* GRIFFITHS, E., and others.

IVES, L. A. Some problems of emergency gastrectomy for haematemesis. *Lancet*, Oct. 8, 1949, pp. 644-6.

*JEWESBURY, E. C. O., (and PARSONAGE, M. J.). Observations on the wave and spike complex in the electro-encephalogram. *J. Neurol & Psychiatry*, 12, 1949, pp. 239-245.

JONES, P. F. *See* GRIFFITHS, E., and others.

*KEYNES, G. L. Parathyroid gland-diseases. *Brit. Surg. Pract.*, vol. 6, 1949, pp. 467-475.

*MCKENNA, R. M. B. Advances in the treatment of skin diseases. *Practitioner*, 163, Oct., 1949, pp. 298-304.

——. Prospect for dermatology. *Med. World*, 71, Oct. 21, 1949, pp. 283-6.

OLDFIELD, Josiah. Holiday food. *Med. World*, 71, Oct. 5, 1949, pp. 213-4.

*POSEL, M. M. Haemochromatosis: report of a case in a female. *S. African Med. J.*, 23, Aug. 20, 1949, pp. 699-700.

RAVEN, Ronald W. Early diagnosis of cancer of the alimentary tract. *Med. World*, 71, Sept. 30-Nov. 4, 1949, pp. 175-7, 207-9, 247-8, 280-2, 310-2, 343-5.

*——. Tuberculosis of the breast. *Brit. Med. J.*, Oct. 1, 1949, pp. 734-6.

SHOOTER, R. A. *See* GRIFFITHS, E., and others.

*SIMON, G. Radiology in cardiac disease. *Post. Grad. Med. J.*, 25, Nov., 1949, pp. 543-553.

*TADROS, V. R. A case of cutaneous horn of the arm. *Brit. Med. J.*, Sept. 17, 1949, p. 635.

*TATLOW, W. F. T. Acute purpura with neurological complications associated with "Sedormid" therapy. *Brit. Med. J.*, Sept. 18, 1948, p. 558.

*——. False localising signs in cerebral tumours. *Post Grad. Med. J.*, 25, Oct., 1949, p. 445.

*——. Prognosis of retrobular neuritis. *Brit. J. Ophth.*, Aug., 1948, pp. 488-97.

*THEOBALD, G. W. The relief and prevention of referred pain. *J. Obstet. & Gynæc. Brit. Emp.*, 56, June, 1949, pp. 447-460.

*TOWN, B. W. and WORMALL, A. Action of suramin on proteolytic enzymes. *Biochem. J.*, 44, 1949, p. 38.

*—— (and others). Action of suramin on enzymes. *Nature*, 163, May 7, 1949, p. 735.

*TUBBS, O. S. The surgical treatment of congenital heart disease. *Post Grad. Med. J.*, 25, Nov., 1949, pp. 531-6.

*WILLS, E. D., and WORMALL, A. Action of suramin on some non-proteolytic enzymes. *Biochem. J.*, 44, 1949, p 39.

——. *See also* TOWN, B. W., and others.

*WINNICOTT, D. W. Sex education in schools. *Med. Press*, Oct. 5, 1949, pp. 323-5.

*WITTS, L. J. (CAMERON, D. G. and others). The clinical association of macrocytic anaemia with intestitnal stricture and anastomosis. *Blood*, 4, July, 1949, pp. 793-802.

*——. Experimental macrocytic anaemia in the rat treated with purified liver extract, pteroyl glutamic acid and vitamin B_{12}. *Nature*, 164, July 30, 1949, p. 188.

*——. The experimental production of macrocytic anaemia by operations on the intestinal tract. *Blood*, 4, July, 1949, pp. 803-815.

WORMALL, A. *See* TOWN, B. W., and ——; TOWN, B. W., and others; WILLS, E. D., and ——.

* Reprint deposited in the Library and receipt herewith acknowledged.

UNIVERSITY EXAMINATION POSTAL INSTITUTION
17, RED LION SQUARE, LONDON, W.C.1
G. E. Oates, M.D., M.R.C.P., London

POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS

SOME SUCCESSES GAINED BY OUR STUDENTS 1936-1948:

Final Qualifying Exams.	488
M.R.C.P. (London)	187
Primary F.R.C.S. (Eng.)	204
Final F.R.C.S. (Eng.)	120
F.R.C.S (Edin.)	37
M.D. (Lond.)	54
M. and D. Obst. R.C.O.G.	173
D.A.	163
D.C.H.	112
M.D. by Thesis	Many Successes

PROSPECTUS, LIST OF TUTORS, Etc., on application to :- THE SECRETARY, U.E.P.I., 17, RED LION SQUARE, LONDON, W.C.1. (Telephone HOLBORN 6313)

Leander swam the Hellespont nightly to visit his love, Hero. When one night he perished in the waves, Hero, despairing, threw herself into the sea.

Life was of no value to Hero without Leander—*it was incomplete.*

And many nutrients are of little or no value to the body without the completing presence of an essential companion. As knowledge of these "inter-dependences" increases, the value of Complevite is increasingly widely demonstrated.

The formula of Complevite is based on the body's fundamental need for nutritional *completeness*. Containing the most important vitamins *and minerals*, in rational dosage, it is designed to make good those factors commonly needed as additions to the average or the 'special' diet. In non-specific cases of dietary deficiency, in convalescence, and for patients on restricted diets, it is invaluable.

COMPLEVITE

a *single* supplement for *multiple* deficiencies

The recommended adult daily dose provides:—

vitamin A	2,000 i.u.	vitamin C	20 mg.	iodine	not less
vitamin D	300 i.u.	calc. phosph.	480 mg.	manganese	than 10
vitamin B_1	0.6 mg.	ferr. sulph. exsic.	204 mg.	copper	p.p.m. each

VITAMINS LTD., UPPER MALL, LONDON, W.6

BAILLIERE, TINDALL & COX

recent editions of standard textbooks

BUCHANAN'S ANATOMY

Edited by FREDERIC WOOD JONES, D.Sc., M.Sc., M.B., B.S., F.R.S., F.R.C.S. Collins Professor of Anatomy at the Royal College of Surgeons. Eighth Edition. Pp. viii + 1616 with 847 illustrations. **45s.**

BIGGER'S BACTERIOLOGY

By JOSEPH W. BIGGER, M.D., Sc.D., F.R.C.P., D.P.H., Professor of Bacteriology and Preventive Medicine at the University of Dublin. Sixth Edition Pp. xvi + 548 with 4 coloured plates and 100 illustrations. **20s.**

GREEN'S PATHOLOGY

Revised by H. W. C. VINES, M.D., Pathologist to Charing Cross Hospital and Dean of Charing Cross Hospital Medical School. Seventeenth Edition. Pp. viii + 1216 with 12 coloured plates and 730 illustrations. **42s.**

MAY & WORTH'S DISEASES OF THE EYE

Revised by MONTAGUE L. HINE, M.D., F.R.C.S., Surgeon to the Westminster Ophthalmic Hospital. Tenth Edition. Pp. xii + 544 with 32 coloured plates and 331 illustrations. **22s. 6d.**

7 & 8 Henrietta Street London W.C.2

THREE IN ONE

trade mark **'SULPHATRIAD'** brand

Compound Sulphonamide

THREE POWERFUL SULPHONAMIDES IN ONE PREPARATION

Research directed towards overcoming the risk of crystalluria attendant upon, and limiting, treatment with certain of the easily absorbed sulphonamides led to the use of mixtures of sulphonamides. The possibility of crystalluria and consequent renal damage is lessened because the solubility of any one sulphonamide is not interfered with by the presence of another.

'Sulphatriad' combines the high bacteriostatic activity of its constituents, and in therapeutic doses the risk of renal damage is practically negligible.

'Sulphatriad' is supplied in the form of tablets, and as a palatable suspension particularly advised for children.

Each tablet or teaspoonful (4 c.c.) suspension contains:—
Sulphathiazole 0.185 Gm., Sulphadiazine 0.185 Gm., Sulphamerazine 0.130 Gm.

Supplies:—'SULPHATRIAD' tablets are supplied in containers of 25, 100 and 500 tablets
'SULPHATRIAD' suspension is supplied in bottles of 4 and 80 fl. oz.

Information Service

In those fields of therapeutics in which there is greatest activity it is inevitable that standard text books are sometimes unable to keep pace with important new developments. The medical student who wishes to keep abreast of such developments but cannot spare the time to consult original articles will often find that the publications issued by the manufacturers of new drugs are of considerable value.

You are cordially invited to communicate with us whenever you feel we might be of help. We would be obliged if you would include in any communication particulars of your medical school and status (i.e., whether clinical or pre-clinical).

manufactured by

MAY & BAKER LTD

48287

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD., DAGENHAM

KERFOOTS PENICILLIN LOZENGES B.P.

Issued in packages of 20, 50, *and* 500

THOMAS KERFOOT & CO. LTD.
VALE *of* BARDSLEY · LANCASHIRE

K4E

These Lozenges are designed to dissolve very slowly in the mouth. Taken according to directions a single lozenge will last from 25 to 30 minutes or more, wearing away to the thinnest of wafers before disappearing.

Each Lozenge contains 500 international units of Penicillin (Calcium Salt) in a pleasing base. All the manufacturing and packing operations are carried out with great care to ensure full activity.

KEROCAIN

(PROCAINE HYDROCHLORIDE KERFOOT)

LOCAL ANAESTHESIA AT ITS BEST

Procaine Hydrochloride in an exceptionally pure and reliable form, conforming to standards considerably more stringent than those of the B.P. Prepared under ideal conditions and the strictest analytical control.

Always specify KERFOOT

THOMAS KERFOOT & CO. LTD., Vale of Bardsley, Lancs.

K.11a

'SULPHAMEZATHINE'
TRADE MARK

ORAL SUSPENSION FOR CHILDREN

For many bacterial infections in children, 'Sulphamezathine' brand Sulphadimidine is the safest and most effective of all the sulpha drugs. It rarely gives rise to unpleasant symptoms, and renal complications are almost unknown.

'Sulphamezathine' Oral Suspension is a pleasantly flavoured preparation containing 1 gramme of 'Sulphamezathine' per 2 fluid drachms. Children take it readily, and it provides an attractive alternative to 'Sulphamezathine' tablets.

'Sulphamezathine' Oral Suspension is issued in bottles of 100 c.c., 500 c.c. and 2 litres

Literature and further information available, on request, from your nearest I.C.I. Sales Office —London, Bristol, Birmingham, Manchester, Glasgow, Edinburgh, Belfast and Dublin.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LIMITED

A subsidiary company of Imperial Chemical Industries Limited

WILMSLOW, MANCHESTER

ICI

Ph.68

W. H. BAILEY & SON LTD.

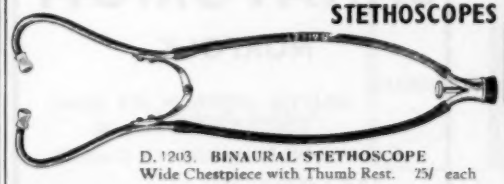
SURGICAL INSTRUMENT MAKERS

BAILEY'S CLINICAL THERMOMETERS
Every Thermometer is guaranteed, clearly marked
½ Min. Mag. 3/6 each

SOLID STEEL SCALPELS. 4/6 each

STETHOSCOPES

Hospital and Invalid Furniture



D. 1203. BINAURAL STETHOSCOPE
Wide Chestpiece with Thumb Rest. 25/ each

SC 1692
Head Mirror on Web Band
Size 3½" dia..
Centre hole ... 25/- Other patterns from 16/6

WHY NOT SEND YOUR REPAIRS TO US?
SCISSORS, SCALPELS KNIVES of all descriptions and RAZORS Ground and Set.
HYPODERMIC SYRINGES repaired
LOWEST PRICES

BAILEY'S DIAGNOSTIC SETS D.1081 consisting of May's Ophthalmoscope, Auriscope, with 3 Speculæ, Duplay's expanding Nasal Speculum, Angular Laryngeal Lamp and two Mirrors, Tongue Spatula and Handle with Rheostat to fit the above instruments, complete in case, with spare lamp. PRICE complete £7 2 6. Auriscope, with 3 Specula, small battery, handle and spare lamp in case £3 0 0

PRICES RULING AT DATE OF DESPATCH

10% DISCOUNT
Allowed to Students mentioning this Advert

GERrard 3185 45 OXFORD STREET
2313 2 RATHBONE PLACE

LONDON, W.1

WHITBREAD'S

ALE

&

STOUT

IN BOTTLE — ON DRAUGHT

Wright's
Liquor Carbonis Detergens

the principle behind Wright's Coal Tar Soap

The medical profession throughout the world is unanimous in its recognition of Wright's Liquor Carbonis Detergens as the most effective antiseptic and antipruritic for treatment of skin diseases.

For over 80 years this preparation has held a unique position, as the foremost therapeutic agent in dermatological practice, and as the active constituent which gives Wright's Coal Tar Soap its health-protecting powers.

Wright's COAL TAR Soap

IDEAL FOR TOILET AND NURSERY

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQUARE, LONDON, W.C.1

G. E. Oates, M.D., M.R.C.P., London

POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS

SOME SUCCESSES GAINED BY OUR STUDENTS 1936-1948:

Final Qualifying Exams.	488
M.R.C.P. (London)	187
Primary F.R.C.S. (Eng.)	204
Final F.R.C.S. (Eng.)	120
F.R.C.S (Edin.)	37
M.D. (Lond.)	54
M. and D.Obst.R.C.O.G.	173
D.A.	163
D.C.H.	112
M.D. by Thesis	Many Successes

PROSPECTUS, LIST OF TUTORS, Etc., on application to :- THE SECRETARY, U.E.P.I., 17, RED LION SQUARE, LONDON, W.C.1.

(Telephone HOLBORN 6313)

THE MUNDESLEY SANATORIUM

NORFOLK.

Resident Physicians :

E. C. WYNNE-EDWARDS, M.B. (Cantab.), F.R.C.S. (Edin.)

GEORGE H. DAY, M.D. (Cantab.)

Terms from 10½ guineas weekly

For all information apply the Secretary :

The Sanatorium, Mundesley, Norfolk

WHAT SHOULD BE THE CRITERION FOR AN INFANT MILK FOOD—

economy...

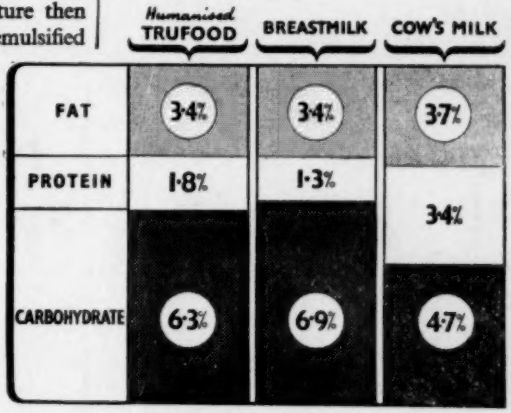
or the provision of optimal nutrition?

Breast milk is the natural food for the human infant. Surely then, the indicated substitute is one which approximates most closely to breast milk?

In Humanised Trufood this close approximation to human milk is achieved by breaking down cow's milk into its constituents, and then re-assembling them in proportions similar to those of breast milk. Spray-drying at a low temperature then ensures that the fat is in a finely emulsified state. Naturally all this entails the use of costly technical processes.

The result is not a cheap product, but a reasonably priced one which has a balance of nutrients similar to that of breast milk: the protein, for instance, is similar not only in quantity but also in ratio of casein to soluble protein. For this reason Humanised Trufood is the indicated substitute in all cases where breast-feeding is not possible.

Note the similarity between Humanised Trufood and breast milk and the contrast of both with cow's milk.



THERE ARE PLENTIFUL SUPPLIES OF TRUFOOD AVAILABLE

Enquiries about Trufood products or matters in which the experience of Trufood experts may be of value should be addressed to

TRUFOOD PROFESSIONAL INFORMATION SERVICE, BEBINGTON, CHESHIRE

TFD 52-23

'ANAHÆMIN'

The *established* treatment for pernicious and other macrocytic anæmias

Evidence is accumulating that the therapeutic action of liver extract in pernicious anæmia depends upon the presence not only of a primary factor, vitamin B_{12}, but upon the presence also of accessory factors (*J. Clin. Invest.*, 1949, **28**, 791).

For most cases of pernicious anæmia, therefore, whether complicated with subacute combined degeneration of the cord or not, Anahæmin is recognised as the preparation for effective treatment; this is acknowledged by the pre-eminent position held by Anahæmin for more than a decade.

'ANACOBIN'

Solution of PURE crystalline vitamin B_{12}

Occasionally, cases of pernicious anæmia arise which cannot be treated satisfactorily, even with Anahæmin, because of hypersensitivity. For such cases Anacobin is available.

Further information is available on request.

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
TELEPHONE: CLERKENWELL 3000 TELEGRAMS: TETRADOME TELEX LONDON

Anah Anab/E/2

Editor: G. C. R. MORRIS
The Exoma Press, Ltd., N.1 255/7 Liverpool Rd.,